ASSESSOR BOOKLET

TĪKAROHIA TE MARAMA REALISE YOUR POTENTIAL

Assessment Support Materials

MAHINGA KAI

NZQA
Mana Tohu Mātauranga o Aotearoa
New Zealand Qualifications Authority

MQS
Māori Qualifications Services
Te Ohu Tohu Mātauranga Māori

Tohu Artist - Tiana Maihi
(Ngā Puhi, Te Arawa, Ngāti Porou, Ngāi Tai)

Assessment Support Materials

MAHINGA KAI

Introduction

Welcome to the Assessment Support Materials for Mahinga Kai.

The Assessment Support Materials for Mahinga Kai have been developed to support you the assessor in achieving the outcomes of the unit standards listed below and are guidelines only. Please ensure you are using the most up to date standard by checking the NZQA website before using the materials in this booklet. If you would like to provide us with feedback on these materials or suggest changes to the content of this resource please contact us on Māori Qualification Services mqs@nzqa.govt.nz

Ngā mihi

Level 1

19531 Demonstrate knowledge of a native marine fish and a native marine shellfish species and its significance to Māori

19535 Demonstrate knowledge of a native freshwater fish and a shellfish species and its significance to Māori

Level 2

25469 Explain crop propagation in accordance with tikanga and crop requirements.

25471 Explain the cultivation of crops in accordance with tikanga and crop requirements

25474 Explain the harvesting of crops in accordance with tikanga and crop requirements

25476 Explain crop storage practices in accordance with tikanga and crop requirements

Level 3

25470 Plan, prepare, carry out, and evaluate the propagation of crops inaccordance with tikanga

25473 Plan, prepare, carry out, and evaluate the cultivation of crops in accordance with tikanga

25475 Plan, prepare, carry out, and evaluate the harvesting of crops in accordance with tikanga

25477 Plan, prepare, carry out, and evaluate the storage of crops in accordance with tikanga

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'Te manu ka kai i te miro, nōna te ngahere
Te manu ka kai i te mātauranga, nōna te ao'

–

'The bird that partakes of the berry, his is the forest.
The bird that partakes of knowledge, his is the world'

Contents

FIELD MĀORI ASSESSMENT SUPPORT MATERIAL

TĪKAROHIA TE MARAMA
REALISE YOUR POTENTIAL

LEVEL 1

MAHINGA KAI

UNIT STANDARD 19531 (VERSION 5)

Demonstrate knowledge of a native marine fish and a native marine shellfish species and its significance to Māori

(Level 1, Credits 5)

ASSESSOR BOOKLET

NZQA
Mana Tohu Mātauranga o Aotearoa
New Zealand Qualifications Authority

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Te Ohu Tohu Mātauranga Māori

Assessor Information

There are TWO (2) assessment tasks that the ākonga must correctly complete to gain credits for this standard.

Evidence for Paetae/Achieved

All assessment evidence should be collected by the assessor and retained for assessment and moderation purposes (such as portfolio, answer sheets, audio or digital).

You will need to discuss with the ākonga the length of time they must complete the assessment. There are many ways ākonga may present their evidence. They may use:

- Power Point and talk to their presentation,
- Illustrations using images and identifying designs etc,
- Write descriptive essays, maintain a visual diary etc.

Ākonga booklet

The ākonga receives this booklet. It outlines important information for their assessment.

Ākonga assessment material The ākonga receives this. It outlines important information for the ākonga including:

- Assessment and other information,
- Assessment tasks..

Ākonga assessment tasks

These sheets and any other evidence should be collected by the Assessor and retained for assessment and moderation purposes.

Where ākonga choose to provide oral description/evidence for Task 3, this must be recorded (i.e. recorded onto digital device) or verified by a credible verifier, i.e. A person with knowledge skills, experience and mana. Where ākonga work has been selected for moderation, the file and/or attestation form must be included with the materials.

Where a recording of the demonstration is submitted for moderation, the ākonga identification sheet (refer following link: http://www.nzqa.govt.nz/assets/Providers-and-partners/Assessment-and-moderation/mod-visevidence-cvr.doc) must be included.

You will need to discuss with the ākonga the length of time they must complete the assessment. He ture-a-kōnui: one credit equates to 10 notional hours of teaching, practice and/or study, and assessment.

Authenticity

As per NZQA requirements, the assessor must:

- verify that the work submitted for assessment has been produced by the ākonga
- consider (and manage) the potential for work to have been copied, borrowed from another ākonga, photocopied from a book or downloaded from the internet.

Ākonga may work with and learn from others to gather information from a variety of sources. However, you must be clear that the work to be assessed has been processed and produced by the ākonga.

To help manage authenticity of ākonga work, where the ākonga is asked to complete any written tasks, the ākonga is asked to use their own words as well as provide reference/s for their information. Please ensure you discuss this with your ākonga.

For further information, please refer to the following link:

http://www.nzqa.govt.nz/providers-partners/assessment-and-moderation/assessment-of-standards/generic-resources/authenticity/.

Referencing

This assessment requires the ākonga to reference his/her information. For the purposes of this assessment, the following are examples of reference styles.

EXAMPLES OF REFERENCING STYLES

1 **Book**

King, M. (2000). *Wrestling with the angel: A life of Janet Frame*. Auckland, New Zealand: Viking.

2 **Course handout/Lecture notes (electronic version)**

Archard, S., Merry, R., & Nicholson, C. (2011). Karakia and waiata [PowerPoint slides]. Retrieved from TEPS757-11B (NET): Communities of Learners website: http://elearn.waikato.ac.nz/mod/resource/view.php?id=174650.

3 **Film**

Māori Television (Producer). (2016). Iwi Anthems, Series 2 Episode 5 [video file]. Retrieved from: http://www.maoritelevision.com/tv/shows/iwi-anthems/S02E005/iwi-anthems-series-2-episode-5.

4 **Magazine/Newspaper article – popular/trade/general interest**

Fox, D. (2015, 15 September). Viewpoint: Not one more acre. *Mana*. Retrieved from: http://www.mana.co.nz/heritage/viewpoint.html.

5 **Personal Communication (letters, telephone conversations, emails, personal interviews, private social networking) – no reference list entry required (not recoverable); however, for quoting or citing in text**

J. Jackson, personal communication, March 12, 2011.

6 **Webpage**

New Zealand Trade and Enterprise. (n.d.). Agribusiness. Retrieved from https://www.nzte.govt.nz/en/export/market-research/agribusiness/.

PREPARATION FOR MODERATION

It is no longer necessary to complete a Moderation Cover Sheet as this information is entered online. If physical materials are sent for moderation, please ensure name of school and standard are included.

Digital submissions can be made directly through the application at any time.

Using the online External Moderation Application, schools and providers must include:

1. a copy of the task and any key supporting resources
2. a copy of the assessment schedule
3. up to 8 samples of student work consisting of the key materials that the assessor has used to make an assessment judgement. (ungraded unit standards: schools – 4 learner samples; providers – 3 learner samples).

For moderation to occur:

4. all files must be viewable online
5. URLs, e.g. for student created websites, will need to be submitted as links within a document.

For more information on the digital moderation process, please contact your Principal Nominee or Moderation Liaison (ML).

If you have any issues with preparing materials for moderation OR do not have materials to submit (ie you didn't assess this standard), **speak** to your Principal Nominee (PN) or Moderation Liaison (ML).

ASSESSOR INFORMATION – ASSESSMENT TASKS

Outcome 1	**Explain the importance of one native marine fish and one native marine shellfish species to Māori in a local context.**
Outcome 2	**Explain the characteristics that help the native marine fish and the native marine shellfish species to survive in its environment.**
Outcome 3	**Explain the environmental relationships that the native marine fish and the native marine shellfish species develops within their own habitat.**

Assessment Task 1

NATIVE MARINE FISH / TE IKA MĀORI NOHO WAITAI

This is a research project.

Select and research ONE (1) native marine fish species.

Species of fish may include but are not limited to – hāpuka, kahawai, kanae, moki, pakaka, pātiki, tāmure, tarakihi, taraute.

Your research findings must:

1. Explain the whakapapa of the selected **native marine fish.**
2. Explain the significance of tikanga Māori associated with the selected **native marine fish**.
3. Describe the importance of the selected **native marine fish** to a local iwi.
4. Describe the environment of the selected **native marine fish** species in terms of its physical characteristics.
5. Describe the behavioural, feeding, and territorial characteristics of the selected **native marine fish** species that enables it to survive in its own habitat.
6. Explain the position of the selected **native marine fish** species in the food chain with other marine species.
7. Describe ONE (1) significant relationship that the **native marine fish** species has developed with another fish or plant species in their own environment.
8. Describe the nature and contribution of that relationship to the survival of the species.

This is a research project.

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Species of fish may include but are not limited to – hāpuka, kahawai, kanae, moki, pakaka, pātiki, tāmure, tarakihi, taraute.

He mahi rangahau tēnei.

Tohua tētahi ika Māori noho waitai hei rangahau.

Anei ētahi ēngari ara noa atu ētahi atu: koura, hāpuka, tarakihi, tāmure, kahawai, moki, pātiki.

Rangahautia tētahi ika Māori noho waitai:

Me kitea ēnei whāinga –

Ka whakamārama:

- i tōna whakapapa
- i ngā tikanga Māori whaitake e pā ana ki a ia
- i tōna whai tikanga hoki ki te iwi kāinga.

Ka whakaatu i:

- ōna āhuatanga okiko
- ōna whanonga
- tōna whai mana kia ora tōna noho i tōna taiao.

Ka whakamārama i:

- tōna tūranga i tētahi tāhuahua
- tētahi hononga whaitake ki ētahi atu ika, tipu rānei
- te āhua o taua hononga e ora ai ia i tō rātou taiao.

This task assesses the evidence requirements of 1.1, 1.2, 1.3, 2.1, 2.2, 2.3, 2.4, 3.1, 3.2, and 3.3.

1.1 The whakapapa of the native species is explained.

1.2 The significance of tikanga Māori associated with the native species is explained.

1.3 The importance of the native species to local Māori is described.

2.1 The environment of the native species is described in terms of its physical characteristics.

2.2 The behavioural characteristics of the native species is described in terms of those that enable it to survive in its environment.

2.3 The feeding characteristics of the native species are described in terms of those that enable it to survive in its own environment.

2.4 The territorial characteristics of the native species are described in terms of those that enable it to survive in its own environment.

3.1 The position of the native species in the food chain of other marine species is described.

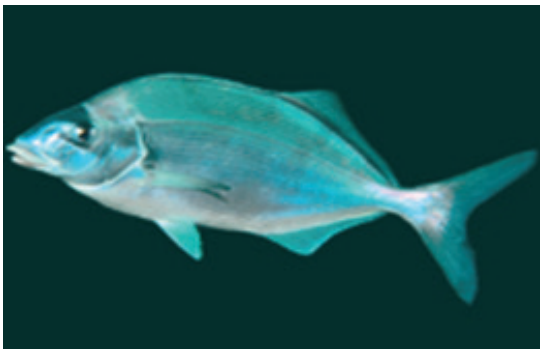
3.2 One significant relationship that the native species has developed with another fish or plant species in their own environment is described.

3.3 The nature of the selected relationship is described in terms of how this relationship contributes to the survival of the native species.

An example of an answer that would be acceptable for task 1.

THE MOKI

1.1 The whakapapa



THE WHAKAPAPA OF THE MOKI

Species

The MOKI belongs to the latriade species. Others are Kohikohi (trumpeter), Koihi (Telescope fish), Porae, and Tarakihi

Environment: shallow coastal waters of Bay of Plenty and further south

Blue Moki:

Ranginui = Papatūānuku

↓

Tangaroa = Pūwahahara

↓

Moki

TE WHAKAPAPA O TE MOKI

Te Momo – Latridopsis cilliaris ānei anō ētahi momo, te kohikohi, te koihi, te porae, me te tarakihi.

Te Taiao – Ngā waitai pāpaku o te paripari o Te Moana-a-Toi ā heke iho ki te tonga hoki.

Blue Moki:

Ranginui = Papatūānuku

↓

Tangaroa = Pūwahahara

↓

Moki

1.2 The whakapapa

Māori fished according to the Māramataka and the observations of Matariki.

If the stars for Matariki were bright when they appeared in late May early June meant it was a very good season for fishing.

The māramataka: Nights of the moon.

Tangaroa-ā-mua: good day for fishing.

Tangaroa-ā-roto; good day for fishing.

Tangaroa-kiokio: an excellent day for fishing.

E ai ki te Māramataka me ngā tohu a Matariki, he tino pai te wā ki te hī ika mehemea e piataata ana ngā whetū a te pito o te mārama o Haratua ki te tīmatanga o Pīpiri.

Ko ngā pō o te māramataka:

- Tangaroa-ā-mua: he pai mō te hī ika.
- Tangaroa-ā-roto: he pai mō te hī ika.
- Tangaroa-kiokio: he tino pai mō te hī ika

1.3 Importance to Local Iwi

Iwi in the Cape Runaway believe the blue moki has a special significance in their history and lives.

The blue moki come to spawn in the waters around Cape Runaway in their traditional fishing grounds.

E ai ki te iwi o Te Whānau-a-Apanui nā tō rātou rangatira, nā Pou, i mau mai te moki i Hawaiiki ki Aotearoa.

Hokihoki tonu te moki ki ngā wai o Te Whānau-a-Apanui ki te paratau.

2.1 Environmental Physical Characteristics

The moki like cooler water temperatures, rocky structures and like to stay close to weed edges, and close to the channels.

Ko te taiao o te moki, kei roto i ngā waitai āhua mātaotao, ngā ākau, ki te taha o ngā otaota, ā, ki ngā awakeri anō hoki.

2.2 Behavioural Characteristics

Larger moki are much more numerous in the cooler southern waters.

The adult moki are mostly found swimming over sand-floored canyons or schooling near reasonably shallow, reef weed areas.

Young Moki lessening off north of the Bay of Plenty.

They are sometimes found swimming around in caves or under ledges.

Ka kitea i ngā waitai mātaotao o Te Tai Tonga te nuinga o ngā Moki āhua nunui e kau haere ana i te papa o ngā pākohu, ā, i te taha rānei o ngā ākau pāpaku me ngā matamataraupo hoki.

Kua māwhe ngā moki rīki ki te Moana-nui-a-Toi. Ka kitea e kau haere ana i roto i ngā ana, ā i raro hoki i ngā whata o te moana.

2.3 Feeding Characteristics

Moki mainly dig around in the sand and mud after crabs and other crustaceans, as well as shellfish and worms

I te nuinga o te wā, ka karikari haere te moki i ngā kirikiri me ngā repo ki te rapu kai mātaitai iti nei te rahi, i ngā noke anō hoki.

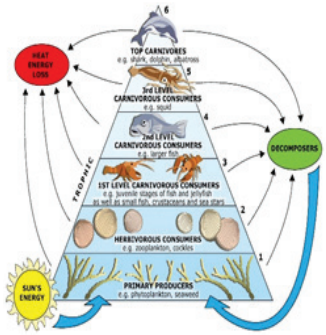
2.4 Territorial Characteristics

Blue moki are native around New Zealand and can be found off southeast Australia.

Juveniles live in inshore waters around rocky reefs while adults are found in offshore waters forming schools. Some adults can be found on reefs.

Ka kitea te Moki ki Aotearoa nei, engari ka kitea anō i te hau Tonga-mā-Rāwhiti o Ahitereiria. Noho ai ngā punua moki i ngā waitai ō ngā ākau pāpaku ki tātahi, ā, ko ētahi anō kei runga o ngā ākau.

3.1 Position on the food chain



The third level and above feed on any organisms big enough to obtain energy. These are called tertiary consumers such as larger fish.

The blue moki is positioned on this level of the food chain.

Kei te kaupae toru ā piki ake o te raupapa kame kai te moki e noho ana, e kīia nei ko nga Kai Mātāmuri, nā te rahi o te hanga o te moki

3.2, 3.3 Significance and nature of relationships

Macrocystis pyrifera Kelp (Seaweed)

The Macrocystis pyrifera kelp form large forests in the deep sheltered waters of Southern New Zealand which provides finfish like the blue moki protection from predators.

Ko te tino tikanga o te whai pānga o te moki me ōna momo ki te rimurimu, hei whakaruruhau kia kore rātou e kitea, ka kāinga.

Note: Your ākonga has been asked to provide references. Where you have referred to a book, or website, or person, please acknowledge this in your lessons.

websites:

http://fs.fish.govt.nz/Doc/21706/09_MOK_09.pdf.ashx

http://www.tetaurawhiri.govt.nz/assets/LanguageResources/MatarikiBooklet.pdf

http://wildblue.co.nz/Info/Fish+ID+and+Tactics/Reef+Species/Blue+Moki.html

ttps://fishingmag.co.nz/fish-new-zealand-sea-fish-species/blue-moki-latridopsis-ciliaris

http://www.tandfonline.com/doi/pdf/10.1080/00288330.1983.9515991

http://sciencelearn.org.nz/Contexts/Life-in-the-Sea/Sci-Media/Images/Marine-trophic-pyramid.

http://education.seattlepi.com/difference-between-1st-2nd-3rd-level-consumers-food-3293.html

http://www.spotx.com/fish-recipes/blue-moki

http://www.nationalaquarium.co.nz/animals-and-fish/new-zealand-animals-and-fish/deep-sea-fish/#BlueMoki

Assessment Task 2

NATIVE MARINE SHELLFISH / KAI MĀTAITAI MĀORI NOHO WAITAI

This is a research project – Select and research a native marine shellfish species.

Your research findings must:

1. Explain the whakapapa of the selected native marine shellfish species.
2. Explain the significance of tikanga Māori associated with the native marine shellfish species.
3. Describe the importance of the selected native marine shellfish species to local iwi.
4. Describe the environment of the native marine shellfish species in terms its physical characteristics.
5. Describe the behavioural, feeding and territorial characteristics of the native marine shellfish species that enables it to survive in its own environment.
6. Explain the position of the native marine shellfish species in the food chain of other marine species.
7. Describe ONE (1) significant relationship that the native marine shellfish species has developed with another fish or plant species in their own environment.
8. Describe the nature and contribution of that relationship to the survival of the species.

He mahi rangahau tēnei.

Tohua tētahi mātaitai Māori noho waitai hei rangahau. Anei ētahi ēngari ara atu: koura, kouraua, pāpaka, kākahi.

Rangahautia tētahi mātaitai Māori noho waitai:

Me kitea ēnei whāinga –

Ka whakamārama:

- i tōna whakapapa
- i ngā tikanga Māori whaitake e pā ana ki a ia
- i tōna whai tikanga hoki ki te iwi kāinga.

Ka whakaatu i:

- ōna āhuatanga okiko
- ōna whanonga
- tōna whai mana kia ora tōna noho i tōna taiao.

Ka whakamārama i:

- tōna tūranga i tētahi tāhuahua
- tētahi hononga whaitake ki ētahi atu ika, tipu rānei
- te āhua o aua hononga mō tōna mataora i tō rātou taiao.

This task assesses the evidence requirements of 1.1, 1.2, 1.3, 2.1, 2.2, 2.3, 2.4, 3.1, 3.2, and 3.3.

1.1 The whakapapa of the native species is explained.

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An example of an answer that would be acceptable for task 1 - Native marine shellfish species.

THE PĀUA

1.1 The whakapapa

Species: Pāua

Scientific name: Haliotis iris

Length: 12.5–18cm (12.5cm legal minimum shell size for harvest.

Pāua belong to the Haliotidae family (abalones). Related species: Related species include Yellow-foot pāua (H. australis) and Virgin pāua (H. virginea).

The whakapapa of the Pāua

Ranginui = Papatūānuku

↓

Tangaroa

↓

Kiwa = Hine-moana

↓

Pāua

Te momo – Pāua, Black foot

Te ingoa pūtaiao – Haliotis iris

Te roa: 12.5 – 18 cm. E ai ki te ture kia 12.5cm te roa o te pāua kātahi ka āhei ki te hauhake.

Nga momo pāua he pango te take, kararuri , hihiwa, koio he tuatea te take, korohiwa he kōwahi te take.

Te whakapapa o te Pāua

Ranginui = Papatuanuku

↓

Tangaroa

↓

Kiwa = Hine-moana

↓

Pāua

1.2 He tikanga

Pāua has always been a food source for Māori, and plays a significant role in manaakitanga ki ngā manuhiri (hosting of visitors).

Tikanga for taking pāua is to take enough to feed and not overfish. Also take one or two from one area and then look elsewhere, in this way the local harvesting sites are not stripped bare of Pāua. If a rock is turned in searching for pāua, the rock should be returned to its original position ensuring minimal environmental disruption. Only take legal size pāua and measure them before removing them.

He tino kai te pāua nā te iwi Māori. He tohu manaaki manuhiri.

Ko te tikanga o te hauhake pāua me hauhake hei kai, waiho ētahi mō muri, kia kōtahi, kia rua rānei kohinga i te wāhi kōtahi, ka neke haere ki tētahi atu wāhi kia māruru tonu ai te tipu o te pāua.

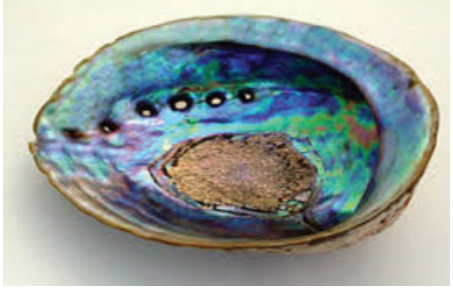
Ki te hurihuri i ngā kōhatu, toka rānei, whakahokia kia noho pai tonu te taiao. Me hauhake i ngā pāua e āhei ana te rahi ki te ture, me inea i mua i tō hauhake

1.3 Importance to local Māori

Pāua has been one of the most intensively utilised marine creatures if people have been living in Aotearoa. Māori have used pāua as a food source and the shells as containers for holding and mixing pigments. The shell has also been fashioned into ornaments of personal adornment, decorative elements in whakairo, and inlays in articles such as fish hooks (its colours are effective lures for fish such as kahawai and barracouta).

He maha ngā mahinga o te pāua ki ngā tāngata o Aotearoa. Ki te Māori he kai te pāua. Ko ngā anga hei ipu pūpuri taonga, hei mahi taonga mau mō te tangata, hei whakapaipai whakairo, hei korotiwha matau hōpu ika papai, hei tāwai ika pērā i te kahawai me te mangā.

2.1 Physical Characteristics

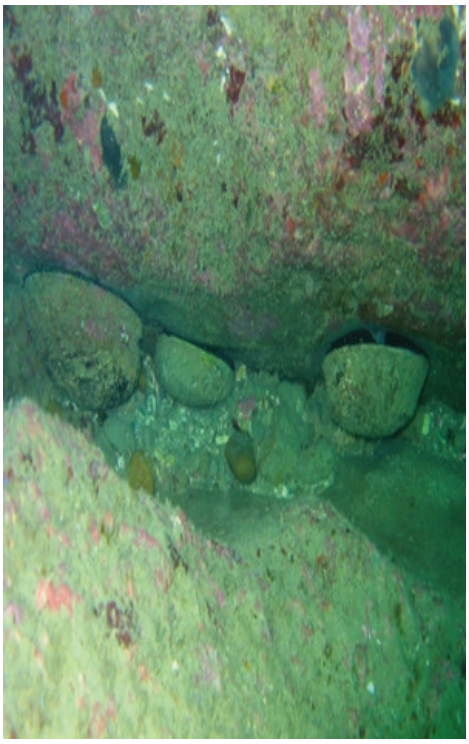


The pāua is the most brightly coloured of all our sea shells. In the water, the outside of its thick oval shell is rough and dull green, and often encrusted with coral-like seaweeds and other animals. Inside, the shell is a beautiful iridescent blue, green, and mauve. Beneath the shell is a shiny, black, muscular foot which enables the pāua to glide about quite quickly when foraging for food

I roto i te wai he porotitaha, he mātotoru, he taratara, he kakariki te tae o tōna anga. I ētahi wā piri tonu ngā rimurimu me ngā anga o ētahi atu momo ki te anga o te pāua.

Ātaahua ana a roto o te anga o te pāua piātaata ana ngā tae, te kahurangi, te kakariki me te porotea. Kei raro i te anga o te pāua he waewae piataata, pango hoki. He kōpaka te waewae o te pāua kia pai tana koke haere ki te kimi kai.

2.2 Behavioural Characteristics



Pāua move about and forage at night, and hide, motionless, during the day. If you disturb a pāua, it clings to the rock with its powerful foot. They live under rocks and ledges, from low tide level down to six metres, but a few go down to twenty metres. Often the pāua crowd together on shallow reefs.

Under the best conditions, such as around Wellington's rocky coasts, pāua reach their full size in 3–4 years, but they grow more slowly on some other coasts. On Banks Peninsula, for example, they are all small – they are called 'shorties' down there. The largest pāua (up to 200 mm long) may be twenty-five years old or more.

Ka huri haere te pāua i te pō. Ka huna, ka noho, ka āta tau i te awatea. Ka noho piri tana waewae ki te toka. Noho ai i raro o ngā toka me ngā whata i te wā o ngā tai iti ki te ono mita, ēngari heke ētahi ki te 220 mita. I te nuinga o te wā noho tonu te nuinga ki ngā ākau pāpaku.

He pai te ākau takutai o Te Whanganui-a-Tara mō te pāua, 3-4 tau ka matua te rahi o te pāua. Pōturi ana te tipu o te pāua ki ētahi atu takutai.

I te rohe o Te Pataka o Rakaihautū he pakupaku noa iho ngā pāua. 200 mm te roa te rahi o te pāua i reira, ahakoa i pea 25 tau ā neke atu te pakeke.

2.3 Feeding Characteristicsi

Pāua eat seaweeds, nipping off small pieces with their rough, belt-like tongue (radula) which has thousands of tiny sharp teeth. They prefer soft, fleshy species of red seaweeds, and use their tongues to scrape microscopic algae off rock surfaces.

He taratara te ārero o te pāua, he rite ki te tātua, ā, he manomano ōna niho tino pakupaku, koi hoki hei tīhaehae rimurimu, hei timotimo maramara hei hoki. Ko ngā tino kai a te pāua ko ngā rimurimu ngāwari pērā i te rimurimu whero.

Ma tōna ārero ka taea e ia te haro kai i ngā toka.

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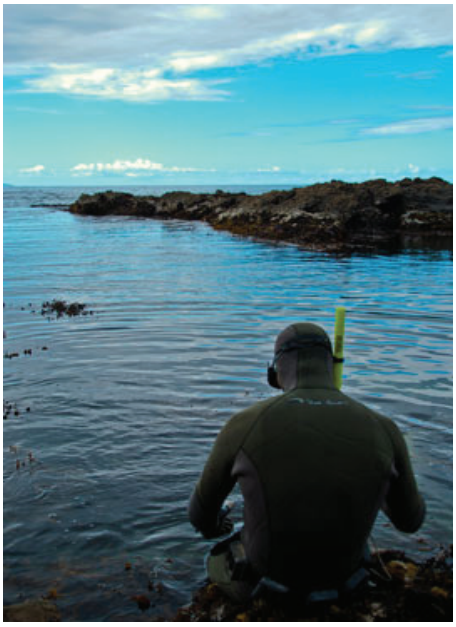
2.4 Territorial Characteristics



New Zealand pāua live on rocky shores – from the Three Kings Islands in the north, to Stewart Island in the south, and as far east as the Chatham Islands. A female pāua lays many thousands of eggs which hatch into shell-less, barrel-shaped swimming larvae (called 'trochophores'). The larvae are carried far and wide on ocean currents. They are sieved out of the water in their millions and eaten by plankton-feeding animals.

Eventually, surviving young pāua grow a shell and sink to the seabed. Most drop into the ocean depths, or land on unsuitable kinds of seabed. A lucky few land on the shallow rocky seabed and thrive there, if they can avoid being eaten by predatory tube worms.

Noho ai ngā pāua ki ngā ākau takutai o Aotearoa mai i Three Kings Islands ki te Taitokerau ki Rakiura i te Tonga, ki Te Wharekauri ki te Rāwhiti.

Manomano ana te whānau o ngā hēki a te pāua, ka whānau kāore he anga, rite te hanga ki o te kāho. Ka kawea ngā rīki e ngā tai o te moana ēngari maha tonu ka kāinga.

Ko ngā mōrehurehu pāua ka tipu tōna anga ka ruku ia ki te papa moana. Ko te nuinga ka ruku ki ngā tai hōhonu. Ka waimarie ētahi ka tau ki ngā ākau pāpaku ka tipu, ā, he maha tonu ka kainga e ngā noke me ētahi atu ika.

3.1 Position on the food chain

Pāua generally prefer to eat fleshy species of red seaweeds. Predators of pāua are crabs, crayfish, octopuses, starfish, fish, and of course humans.

He pai ki te pāua te kai i ngā momo pūreke pērā i te rimurimu whero. Ko ngā kaipatupatu i te pāua ko te pāpaka, te koura, te pātangaroa, ngā momo mātaitai, me te tangata hoki.

3.2, 3.3 Significance and nature of relationships

Coralline algae grow on a variety of surfaces, including rock, sponges, shellfish, and other algae. Their importance is that they are one of the preferred settlement surfaces for pāua. Coralline algae produce chemicals which actively promote both settlement and early development in pāua larvae. An abundance of coralline species means high rates of a pāua settlement. This is an important relationship for pāua survival.

Ka nui ngā momo pūkohu wai kei runga i ngā momo karetai o te moana, arā, ko ngā kōpūpūtai, ngā ika mātaitai, me ētahi atu. Mā ngā matū kei roto i aua pukōhu wai ka wawe te tipu o ngā hēki. Ki te nui ngā momo pūko-hu wai me ngā hēki ka maha ngā nohonga pāua.

Me tino whai take te pāua ki aua momo pūko-hu wai mō tōna mataora

References

(need help? - Refer to the reference guide at the front inside page of this booklet)

Note: Your ākonga have been asked to provide references. Where you have referred to a book, or website, or person, please acknowledge this in your lessons.

Websites:

http://taputeranga.org.nz/the-marine-life/molluscs/pāua/

https://en.wikipedia.org/wiki/P%C4%81ua

http://www.pāua.org.nz/about-pāua/

http://www.fish.govt.nz/en-nz/Recreational/Most+Popular+Species/Pāua/default.htm

https://www.niwa.co.nz/aquaculture/aquaculture-species/pāua

http://collections.tepapa.govt.nz/topic/988

http://www.teara.govt.nz/en/1966/pāua

https://www.niwa.co.nz/sites/niwa.co.nz/files/import/attachments/pāua.pdf

The images used are from websites ākonga may use photographs.

Assessment Schedule

Assessment Task			
This is a research project: Select and research a native marine fish species. The research findings must include –		The Research.	Please tick: N ☐ A ☐
Learning Outcomes	**Evidence Statements**	**Judgement Statements**	Please tick
Explain the selected native marine species whakapapa.	As in example.	The whakapapa of the selected native marine species was appropriate to the species	N ☐ A ☐
Explain the significance of tikanga Māori associated with the selected native marine species.	As in example.	The significance of tikanga associated with the selected species was appropriate to the species.	N ☐ A ☐
Describe the importance of the selected native marine species to a local iwi.	As in example.	The importance of the native marine species to a local iwi was described and researched appropriately.	N ☐ A ☐
Describe the environment of the selected native marine shellfish species in terms of its physical characteristics	As in example.	The environment of the native marine shellfish species was described in accordance with the species physical characteristics,	N ☐ A ☐
Describe the behavioural, feeding, and territorial characteristics of the selected native marine shellfish species that enables it to survive in its own habitat.	As in example.	The behavioural, feeding, and territorial characteristics of the native marine shellfish species was described appropriately.	N ☐ A ☐
Explain the position of the selected native marine shellfish species in the food chain with other marine species.	As in example.	The position of the selected native marine shellfish species in the food chain with oth-er marine species was explained appropri-ately.	N ☐ A ☐
Describe one significant relationship with another fish or plant species and the nature and contribution of that relationship to its own survival.	As in example.	The significant relationship with another fish or plant species and the nature and contribution of that relationship to its own survival was described appropriately.	N ☐ A ☐
This is a research project: Select and research a native marine shellfish species. The research findings must include –		The Research.	N ☐ A ☐

Assessment Task			
Learning Outcomes	**Evidence Statements**	**Judgement Statements**	Please tick
Explain the selected species whakapapa.	As in example.	The whakapapa of the selected native marine species was appropriate to the species	N ☐ A ☐
Explain the significance of tikanga Māori associated with the selected native marine species.	As in example.	The significance of tikanga associated with the selected species was appropriate to the species.	N ☐ A ☐
Describe the importance of the selected native marine species to a local iwi.	As in example.	The importance of the native marine species to a local iwi was described and researched appropriately.	N ☐ A ☐
Describe the environment of the selected native marine shellfish species in terms of its physical characteristics	As in example.	The environment of the native marine shellfish species was described in accordance with the species physical characteristics,	N ☐ A ☐
Describe the behavioural, feeding, and territorial characteristics of the selected native marine shellfish species that enables it to survive in its own habitat.	As in example.	The behavioural, feeding, and territorial characteristics of the native marine shellfish species was described appropriately.	N ☐ A ☐
Explain the position of the selected native marine shellfish species in the food chain with other marine species.	As in example.	The position of the selected native marine shellfish species in the food chain with other marine species was explained appropriately.	N ☐ A ☐
Describe one significant relationship with another fish or plant species and the nature and contribution of that relationship to its own survival	As in example.	The significant relationship with another fish or plant species and the nature and contribution of that relationship to its own survival was described appropriately.	N ☐ A ☐

Overall grade (please circle)	N (Not Achieved)	A (Paetae/Achieved)

Ākonga name		Assessor Name	
Ākonga signature		Assessor signature	

Completion date	

Notes:

FIELD MĀORI ASSESSMENT SUPPORT MATERIAL

TĪKAROHIA TE MARAMA
REALISE YOUR POTENTIAL

LEVEL 1

MAHINGA KAI

UNIT STANDARD 19535 (VERSION 5)

Demonstrate knowledge of a native freshwater fish and a shellfish species and its significance to Māori

(Level 1, Credits 5)

ASSESSOR BOOKLET

NZQA
Mana Tohu Mātauranga o Aotearoa
New Zealand Qualifications Authority

MQS
Māori Qualifications Services
Te Ohu Tohu Mātauranga Māori

Assessor Information

There are TWO (2) assessment tasks that the ākonga must correctly complete to gain credits for this standard.

Evidence for Paetae/Achieved

All assessment evidence should be collected by the assessor and retained for assessment and moderation purposes (such as portfolio, answer sheets, audio or digital).

You will need to discuss with the ākonga the length of time they must complete the assessment. There are many ways ākonga may present their evidence. They may use:

- Power Point and talk to their presentation.
- Illustrations using images and identifying designs etc.
- Write descriptive essays, maintain a visual diary etc.

Ākonga booklet

The ākonga receives this booklet. It outlines important information for their assessment.

Ākonga assessment material The ākonga receives this. It outlines important information for the ākonga including:

- Assessment and other information,
- Assessment tasks..

Ākonga assessment tasks

These sheets and any other evidence should be collected by the Assessor and retained for assessment and moderation purposes.

Where ākonga choose to provide oral description/evidence for Task 3, this must be recorded (i.e. recorded onto a digital device) or verified by a credible verifier, i.e. A person with knowledge skills, experience and mana. Where ākonga work has been selected for moderation, the file and/or attestation form must be included with the materials.

Where a recording of the demonstration is submitted for moderation, the ākonga identification sheet (refer following link: http://www.nzqa.govt.nz/assets/Providers-and-partners/Assessment-and-moderation/mod-visevidence-cvr.doc) must be included.

You will need to discuss with the ākonga the length of time they must complete the assessment. He ture-a-kōnui: one credit equates to 10 notional hours of teaching, practice and/or study, and assessment.

Authenticity

As per NZQA requirements, the assessor must:

- verify that the work submitted for assessment has been produced by the ākonga
- consider (and manage) the potential for work to have been copied, borrowed from another ākonga, photocopied from a book or downloaded from the internet.

Ākonga may work with and learn from others to gather information from a variety of sources. However, you must be clear that the work to be assessed has been processed and produced by the ākonga.

To help manage authenticity of ākonga work, where the ākonga is asked to complete any written tasks, the ākonga is asked to use their own words as well as provide reference/s for their information. Please ensure you discuss this with your ākonga.

For further information, please refer to the following link:

http://www.nzqa.govt.nz/providers-partners/assessment-and-moderation/assessment-of-standards/generic-resources/authenticity/.

Referencing

This assessment requires the ākonga to reference his/her information. For the purposes of this assessment, the following are examples of reference styles.

EXAMPLES OF REFERENCING STYLES

1 **Book**

King, M. (2000). *Wrestling with the angel: A life of Janet Frame*. Auckland, New Zealand: Viking.

2 **Course handout/Lecture notes (electronic version)**

Archard, S., Merry, R., & Nicholson, C. (2011). Karakia and waiata [PowerPoint slides]. Retrieved from TEPS757-11B (NET): Communities of Learners website: http://elearn.waikato.ac.nz/mod/resource/view.php?id=174650.

3 **Film**

Māori Television (Producer). (2016). Iwi Anthems, Series 2 Episode 5 [video file]. Retrieved from: http://www.maoritelevision.com/tv/shows/iwi-anthems/S02E005/iwi-anthems-series-2-episode-5.

4 **Magazine/Newspaper article – popular/trade/general interest**

Fox, D. (2015, 15 September). Viewpoint: Not one more acre. *Mana*. Retrieved from: http://www.mana.co.nz/heritage/viewpoint.html.

5 **Personal Communication (letters, telephone conversations, emails, personal interviews, private social networking) – no reference list entry required (not recoverable); however, for quoting or citing in text**

J. Jackson, personal communication, March 12, 2011.

6 **Webpage**

New Zealand Trade and Enterprise. (n.d.). Agribusiness. Retrieved from https://www.nzte.govt.nz/en/export/market-research/agribusiness/.

PREPARATION FOR MODERATION

It is no longer necessary to complete a Moderation Cover Sheet as this information is entered online. If physical materials are sent for moderation, please ensure name of school and standard are included.

Digital submissions can be made directly through the application at any time.

Using the online External Moderation Application, schools and providers must include:

1. a copy of the task and any key supporting resources
2. a copy of the assessment schedule
3. up to 8 samples of student work consisting of the key materials that the assessor has used to make an assessment judgement. (ungraded unit standards: schools – 4 learner samples; providers – 3 learner samples).

For moderation to occur:

4. all files must be viewable online
5. URLs, e.g. for student created websites, will need to be submitted as links within a document.

For more information on the digital moderation process, please contact your Principal Nominee or Moderation Liaison (ML).

If you have any issues with preparing materials for moderation OR do not have materials to submit (ie you didn't assess this standard), **speak** to your Principal Nominee (PN) or Moderation Liaison (ML).

ASSESSOR INFORMATION – ASSESSMENT TASKS

Name		NSN #	

Outcome 1	**Explain the importance of one native freshwater fish and one native freshwater shellfish species to Māori in a local context**
Outcome 2	**Explain the characteristics that help the native freshwater fish and the native freshwater shellfish species to survive in its environment.**
Outcome 3	**Explain the environmental relationships that the native freshwater fish and the native freshwater shellfish develops within their own habitat.**

Assessment Task 1

This is a research project.

Select and research a native freshwater fish species

Your research findings must:

1. Explain the selected native **freshwater fish** whakapapa.
2. Explain the significance of tikanga Māori associated with the selected native **freshwater fish**
3. Describe the importance of the selected native **freshwater fish** to a local iwi.
4. Describe the environment of the selected native **freshwater fish** species in terms of its physical characteristics.
5. Describe the behavioural, feeding, and territorial characteristics of the selected native **freshwater fish** species that enables it to survive in its own habitat.
6. Explain the position of the selected native **freshwater fish** species in the food chain with other marine species.
7. Describe one significant relationship with another fish or plant species and the nature and contribution of that relationship to its own survival.

This is a research project.

Select and research a native freshwater fish species

TE IKA MĀORI NOHO WAIMAORI

He mahi rangahau tēnei.

Tohua tētahi ika Māori noho waimāori hei rangahau i ētahi kōrero.

Ānei ētahi ēngari arā anō ētahi atu: īnanga, tuna, kokopu, piharau, kowaro, paraki.

Rangahautia tētahi ika noho waimāori.

Me kitea ēnei whāinga –

Ka whakamārama:

- tōna whakapapa,
- ngā tikanga Māori whaitake e pā ana ki a ia,
- tōna whai tikanga hoki ki te iwi kāinga.

Ka whakaatu i:

- ōna āhuatanga okiko,
- ōna whanonga,
- tōna whai mana kia ora tōna noho i tōna taiao.

Ka whakamārama i:

- tōna tūranga i tētahi tāhuahua,
- tētahi hononga whaitake ki ētahi atu ika, tipu rānei,
- te āhua o taua hononga mō tōna mataora i tō rātou taiao.

This task assesses the evidence requirements of 1.1, 1.2, 1.3, 2.1, 2.2, 2.3, 2.4, 3.1, 3.2, and 3.3.

1.1 The whakapapa of the native species is explained.

1.2 The significance of tikanga Māori associated with the native species is explained.

1.3 The importance of the native species to local Māori is described.

2.1 The environment of the native species is described in terms of its physical characteristics.

2.2 The behavioural characteristics of the native species is described in terms of those that enable it to survive in its environment.

2.3 The feeding characteristics of the native species are described in terms of those that enable it to survive in its own environment.

2.4 The territorial characteristics of the native species are described in terms of those that enable it to survive in its own environment.

3.1 The position of the native species in the food chain of other freshwater species is described.

3.2 One significant relationship that the native species has developed with another fish or plant species in their own environment is described.

3.3 The nature of the selected relationship is described in terms of how this relationship contributes to the survival of the native species.

An example of an answer that would be acceptable for task 1 - Native Freshwater Fish.

The Tuna

1.1 The whakapapa

The whakapapa of the Tuna.

Ranginui = Papatuanuku

↓

Te Ihorangi

↓

Tuna – Ngoiro - Tuere

Longfin eel - Anguilla dieffenbachii

Shortfin eel - *Anguilla australis*

There are over 100 different tribal names for freshwater eels, describing their different colours and sizes.

Te whakapapa o te tuna

Ranginui = Papatuanuku

↓

Te Ihorangi

↓

Tuna – Ngoiro - Tuere

Neke atu i 100 ngā ingoa a tēnā iwi, a tēnā iwi, a tēnā iwi mō te tuna e ai ki te ngā tae me te rahi.

1.2 He tikanga

Tikanga varies from iwi to iwi but the main theme is always kaitiakitanga of the tuna resource.

For Waikato-Tainui the first catch of every season is returned to the river, even if the net is full. Fish were allowed to die with dignity, and so they are not cooked straight from the river. When fishing, the tikanga is to only take what was needed.

For Ngai Tahu, tuna is traditionally caught between February and April during the last quarter of the moon (Hinepouri) when the nights were darker, and the eels had begun moving down the streams and into lakes, ready to migrate out to sea to spawn in the Pacific.

Ki te iwi Māori he rangatira tō te tuna. Me hī tuna ki te whāngai te whānau, ā, i te manuhiri hoki.

Kei tēnā iwi, kei tēnā iwi ō rātou tikanga e pā ana ki te tuna, ēngari ko te ia o te kaupapa ko te kaitiakitanga o te tuna.

Ētahi tikanga

I te rohe o Waikato ka whakahokia te tuna tuatahi ki te awa hei whakanui i a Tangaroa.

Ka mau te tuna ka waiho mō tētahi wā ka tunu he tohu i mate rangatira te tuna.

Heria he tuna kia makona te whānau, te manuhiri rānei.

Kei Ngāi Tahu ko nga marama o Hui-Tānguru ki Paenga Whāwhā ngā wā hī tuna, i te wā o Hinepouri.

I ngā pōuriuri ka tīmata te heke o ngā tuna i ngā kōawa ki ngā roto ka heke ki te Moana-nui-a-Kiwa ki te whakawhānau i ana heki.

1.3 Importance to Local Iwi

Tuna are very important for Māori and that is evidenced through our literature. Many marae, around the motu are adorned with carvings of tuna alongside their tupuna. They were heavily relied upon by our tupuna as a source of kai and important events were often scheduled around the harvesting of tuna. They are kaitiaki of our streams, rivers, and lakes and they are used as environmental indicators for the health of our waterways.

He whai mana te tuna ki te iwi Māori, ā, ka kitea i ngā whakairo o ngā whare tīpuna, ka rangona ngā kōrero i roto i ngā pakiwaitara, ā, i ngā mōteatea anō hoki a tēnā iwi, a tēnā iwi

He tino kai te tuna i ngā rā ō mua. Ka tū ngā hui i ngā wā tika mō te hī tuna. Ko ngā tuna ngā kaitiaki o ngā kōawa, ngā awa, me ngā roto.

Ko te tuna ngā kai tohu i te taiao o te hauora o ngā ara wai.

He tuna kei ngā poupou. He tino kai te tuna ki ngā tupuna.

I whakaritea ngā wā pai mo te tuna. He kaitiaki te tuna i te hauoratanga o ngā ara wai a rohe.

2.1 Environmental Physical Characteristics

Tuna can be found throughout Aotearoa. They live mainly in rivers and inland lakes but can be found in almost all types of waters, usually well inland from the coast.

Habitat loss affects tuna. Changes caused by hydro development, drainage, and irrigation schemes and river diversions reduce their habitat and the water available for aquatic life. Culverts and dams can also impact on eels by preventing their migration.

Ka kitea ngā tuna i te katoa o Aotearoa. Noho ai i roto i ngā awa, me ngā roto whenua, ēngari kitea ai i ngā momo wai tawhiti mai i te takutai.

Ko ngā kaupapa i mimiti haere ai ngā nohanga tuna ko te:

- mahi hiko-a-awa,
- mahi hawai wai
- te autaki i te ara-o-ngā-awa
- ngā karawata me
- ngā pā wai kei te motu.

2.2 Behavioural Characteristics

Tuna are New Zealand's top native freshwater predators – no other species prey on them when they are adult. Tuna feed mainly at night, using their powerful sense of smell to track prey. Once an eel is close, taste buds on its head and sensors along its sides help locate the victim. Tuna can travel over land, slithering through wet grass to get to a pond or lake. As long as their skin stays moist they can absorb oxygen through it, surviving long periods out of water.

Ko te tuna te tino kaipatupatu i ngā momo ika o ngā wai Māori.

He ihu kurī tō te tuna. Ka rongo ia i te kakara o tētahi pārurenga. ka huna, ka whai haere, ā, ka mau rawa i a ia.

Me mākū tonu te kiri o te tuna kia piki tōna hāora kia roa tōna wā i waho o te wai.

Ka koki haere te tuna i ngā pātiti mākū o te whenua kia tae atu ai ki ngā puna wai, me ngā moana.

Mehe mākū tonu te kiri o tuna, ka taea tonutia te whakangā i te hāora mā tōna kiri, ā, ka roa tōna noho ki waho i te wai.

.2.3 Feeding Characteristics

Tuna have an omnivorous diet and are opportunistic feeders. Small eels largely consist of insect larvae. When eels become larger, they also feed on small fish, like trout.

Eels have poor eyesight they find their kai using their powerful sense of smell.

He maha ngā kai a te tuna, ā, ko āna kai ko ngā mea I kitea ai e ia! Ko ngā kai ka kainga e te tuna e āhei ana ki te rahi o tōna waha.

Ko ngā hēki a nga ngārara ngā tino kai a ngā tuna riki. Ka nunui ake, ā, ka kai i ngā ika pakupaku pērā i te taraute.

He āhua kāpō te tuna, mā te whakamahi i ōna tairongo kakara ki te rapu kai.

2.4 Territorial Characteristics

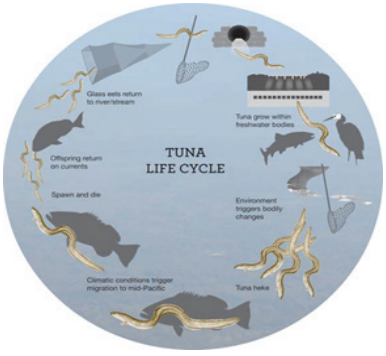
Tuna are often found great distances inland along fresh waterways and in high country lakes which are connected to the sea. Aiding in their inland distribution is their climbing ability in elver (juvenile) stage, under 12 cm in length. As juveniles, they prefer shallow water (under 0.5 m deep) with coarse substratum and faster than average stream flow (such as that found in riffles). Adult longfin tuna tend to be found next to or under large pieces of debris and undercut river banks.

Kitea ai te tuna i roto i nga ara wai Māori, i ngā moana tahora e rere ana ki te moana. Ka āhei te tuna ki te aupiki ki runga i ngā pā o ngā roto ahakoa 12cm tōna roa.

He pai ki ngā tuna riki ngā wai pāpaku, ngā wāhanga kaitara, me te tere o te rere o te wai ka kitea i ngā riwhi.

Ka kitea ngā tuna pakikau-roa i te taha, ā, i raro rānei i ngā otaota nunui ki ngā parenga tapahi.

3.1 Position on the food chain



The life cycle of tuna is very complex, and during different life stages they rely on different habitats to live in and migrate through. They grow and mature into fertile adults in fresh water, then migrate to the sea to breed thousands of kilometers from New Zealand to their spawning grounds near Tonga.

He āhua uaua tonu te mataora o te tuna i ngā wāhanga rerekē o tōna oranga. Ka whakawhirinaki ia ki te rerekētanga o tōna wāhi noho hei oranga, ā, hei hekenga hoki ki te moana. Tipu ake kia pakari i roto i ngā wai Maori, ā, ka heke ki te moana o Aotearoa ki Tonga ki ngā papa whakawhānau heki o reira.

3.2, 3.3 Significance and nature of relationships

Tuna act as a controller in the fresh water eco-system. The relationship with other species is that they are a predator and can prey on all other freshwater fish including introduced species and other tuna. They ambush their prey and use their prodigious sense of smell to locate prey and sneak up on it from downstream. This predatory nature contributes to their survival.

Ko te tuna te kai tātaki i te pūnaha rauropi o te wai Māori.

He konihi te tuna, he maha ngā momo kai ka kainga e te tuna

Ko te whanaungatanga o te tuna ki ētahi atu momo ika o te wai Maori ka kāinga e ia ahakoa te momo, he momo hou, tōna momo hoki.

Ka huna, ka mahi ōna tairongo ki te whai i tana pārurenga, ā, ka patu, ka kai. Nā ēnei tairongo ōna e ora tonu nei te tuna.

Note: Your ākonga have been asked to provide references. Where you have referred to a book, or website, or person, please acknowledge this in your lessons.

Websites:

http://www.doc.govt.nz/nature/native-animals/freshwater-fish/eels/tuna-a-tatou-taonga/

http://www.doc.govt.nz/nature/native-animals/freshwater-fish/eels/freshwater-eels-in-new-zealand/

https://www.niwa.co.nz/te-k%C5%ABwaha/tuna-information-resource/pressures-on-new-zealand-populations/customary-tuna-fisheries

http://ngaitahu.iwi.nz/our_stories/tuna-tastes/

http://www.teara.govt.nz/en/te-hopu-tuna-eeling/page-1

http://www.longfineel.co.nz/conservation/

http://www.pce.parliament.nz/media/1237/jellyman-report-final2.pdf

Assessment Task 2

TE MĀTAITAI MĀORI NOHO WAIMĀORI

This is a research project.

Select and research a native freshwater shellfish species.

Your research findings must:

1. Explain the selected native **freshwater shellfish** whakapapa.
2. Explain the significance of tikanga Māori associated with the selected nativeb**freshwater shellfish**
3. Describe the importance of the selected native **freshwater shellfish** to a local iwi.
4. Describe the environment of the selected native **freshwater shellfish** species in terms of its physical characteristics.
5. Describe the behavioural, feeding, and territorial characteristics of the selected native **freshwater shellfish** species that enables it to survive in its own habitat.
6. Explain the position of the selected native **freshwater shellfish** species in the food chain with other marine species.
7. Describe one significant relationship with another fish or plant species and the nature and contribution of that relationship to its own survival

TE MĀTAITAI MĀORI NOHO WAIMĀORI

He mahi rangahau tēnei.

Tohua tētahi mātaitai Māori noho waimāori ka rangahau i ētahi kōrero.

Ānei ētahi ēngari arā anō ētahi atu: koura, kouraua, pāpaka, kākahi.

Rangahautia tētahi mātaitai Māori noho waimāori.

Ka whakamārama:

- i tōna whakapapa
- i ngā tikanga Māori whaitake e pā ana ki a ia
- i tōna whai tikanga hoki ki te iwi kāinga.

Ka whakaatu i:

- ōna āhuatanga okiko
- ōna āhuatanga whanonga
- tōna whai mana kia ora tōna noho i tōna taiao.

Ka whakamārama i:

- tōna tūranga i tētahi tāhuahua
- tētahi hononga whaitake ki ētahi atu ika, tipu rānei
- te āhua o aua hononga mō tōna mataora i tō rātou taiao.

This task assesses the evidence requirements of 1.1, 1.2, 1.3, 2.1, 2.2, 2.3, 2.4, 3.1, 3.2, 3.3.

1.1 The whakapapa of the native species is explained.

1.2 The significance of tikanga Māori associated with the native species is explained.

1.3 The importance of the native species to local Māori is described

2.1 The environment of the native species is described in terms of its physical characteristics.

2.2 The behavioural characteristics of the native species is described in terms of those that enable it to survive in its environment.

2.3 The feeding characteristics of the native species are described in terms of those that enable it to survive in its own environment.

2.4 The territorial characteristics of the native species are described in terms of those that enable it to survive in its own environment.

3.1 The position of the native species in the food chain of other freshwater species is described.

3.2 One significant relationship that the native species has developed with another fish or plant species in their own environment is described.

3.3 The nature of the selected relationship is described in terms of how this relationship contributes to the survival of the native species.

An example of an answer that would be acceptable for task 1 – Native Freshwater Shellfish.

The Kākahi

1.1 The whakapapa

The whakapapa of the Kākahi.

Ranginui = Papatuanuku

↓

Tangaroa

↓

Kiwa = Hine-moana

Kākahi

Common name: Freshwater mussel

Scientific name: Echyridella menziesi

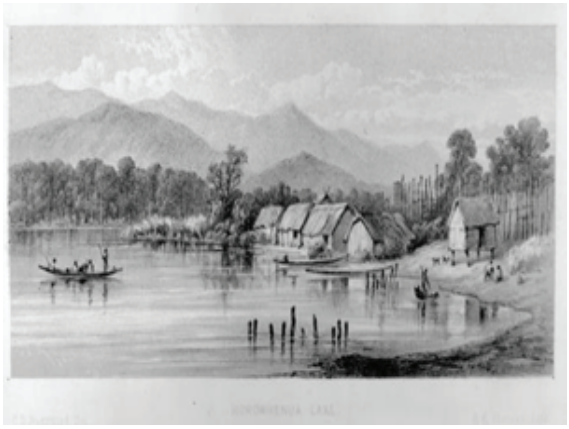
Te Reo Māori names: includes kākahi, kāeo, and torewai

1.2 He tikanga

The kākahi was a valuable mahinga kai resource for many Māori. Traditionally, they were collected throughout the year, but were best in winter. They were eaten raw or lightly boiled, or dried in the sun for use in stews. They were also used in the feeding of motherless infants and as a food for the sick (i.e., as a rongoā). The kākahi shell also had a number of uses that included hair cutting in adults, cutting the umbilical cord of newborn children, scraping vegetables, and as rattles on kites.

Ko te kākahi he mahinga kai tino whai painga ki te iwi Maori. I ngā wā o mua kohikohihia ai ā mutu noa te tau. Engari, ko te takurua te wā tino pai. He kai pai, me kai mata, me pāera, me whakamaroke i roto i te rā, ā, me tiutiu hoki. He pai hei rongoa mā ngā pepi nohinohi, mā te hūnga ngoikore, me te hūnga māuiui hoki. He maha ngā whakamahinga o te anga o te kākahi arā, hei tapahi i ngā makawe o ngā pākeke, tapahi i te iho mai i te pito o te pepe me te rauru o te whaea, hei waruwaru hua whenua, ā hei tātangi i runga i ngā manu aute.

1 .3 Importance to Local Māori



Historically, kākahi have been very important to Māori. They were a source of food and their shells were used as tools. In many areas they remain a valued resource and cultural indicator for Māori.

I ngā kōrero o neherā i whai mana tonu te kākahi ki te iwi Māori, hei oranga hei kai, ko te anga ka whakamahia hei hanga taputapu. I te nuinga o ngā rohe ka noho tonu te kākahi hei rāwai, ā, hei tūtohu tikanga hoki.

2.1 Environmental Physical Characteristics

Kākahi are found in sheltered parts of rivers and streams where the bed is sandy or silty, and in lakes. Kākahi don't usually live in heavy gravel rivers as these rivers lack the stable and sheltered spots kākahi favour. They will hide under overhangs and around fallen branches out of the main flow along stream banks, or buried in soft sediments on lake bottoms with only their siphons showing. Where you find one freshwater mussel there are likely to be more, sometimes many more.

Ka kitea nga kākahi i ngā wāhanga marumaru o ngā awa me ngā kōawa onepū, parakiwai, me ngā roto. Kāore ia e tino noho i ngā awa taumaha te kirikiri, nā te mea kāore he wāhi marumaru kia whai oranga ai rātou. Ka huna rātou i raro i ngā peka tauwhare, ā, i ngā kūkūpango o ngā koawa, ko o rātou ihu (pūkawe) anake ka kitea. Inā ka kitea tētahi kākahi, ki tētahi wāhi, ko te tikanga he maha kei taua wāhi kōtahi.

2.2 Behavioural Characteristics

Kākahi are found in sheltered parts of rivers and streams where the bed is sandy or silty, and in lakes. They burrow into the sediment and are hugely efficient at filtering sediment out of the water. In the past, large beds of kākahi probably helped to maintain the clarity and quality of our waterways. A single mussel can filter around a 1 litre of water per hour, and so dense mussel populations can process the whole volume of a shallow lake in a matter of days, removing fine organic particles and sediment suspended in the water and increasing water clarity.

Ka kitea ngā kākahi i ngā wāhanga marumaru o ngā awa me ngā koawa onepū, parakiwai, me ngā roto. Ka karikari rātou ki roto o ngā waipara, ā he tere rātou ki te ārai waipara i te wai. I ngā rā ō mua nā te nui o ngā kūkūpango kākahi, ka ora tonu nga arawai ā-rohe.

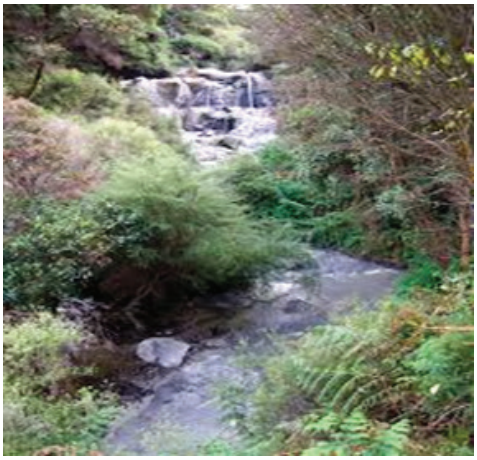
Ka taea e te kākahi kōtahi te tātari kōtahi rita wai ki te haora kōtahi, i tērā ka taea e ngā kākahi riparipa te ketu i ngā pararopi me ngā waipara e tāwere ana i ngā awa, roto, koawa kia noho mārekareka tonu ai.

2.3 Feeding Characteristics

Kākahi eat very small pieces of organic matter that are suspended in the water, such as algae and bacteria. They pump a steady stream of water through two tube-like siphons extending out through the gap in their two shells. Small edible particles are filtered out of the water and eaten. Inedible material is clumped together and ejected as 'pseudofaeces' (or false poos!). This 'filterfeeding' lifestyle means that kākahi pump enormous quantities of water through their siphons.

Ngā kai a te kākahi ko ngā maramara mango i te wai pērā i te pūkohu wai me te kitakita. Ka papu te kākahi i te wai i ōna ngongo e rua, ka kāinga ngā kai pai, ko ngā para ka whakakotahi, a ka whiu. Ko te tātari kai tēnei. Ko te ao o te kākahi tēnei ka taea e te papu whakahiku wai ma ōna ngongo.

2.4 Territorial Characteristics

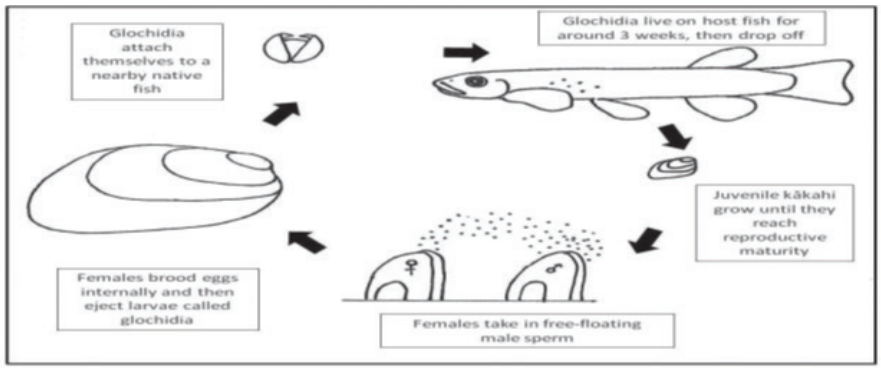


Kākahi usually live partially buried in mud and sand in the beds of lakes and rivers, but they are also found in areas with cobbly or stony bottoms. Kākahi are found in a range of water depths and temperatures.

Very little is known about what determines the waterways in which kākahi choose to live. Some research has indicated that kākahi distributions may be influenced by factors such as wave action, oxygen availability and the presence of toxins. If they don't like where they currently live, they can move elsewhere using their muscular 'foot'.

Noho tonu te kākahi i roto i ngā onepū me ngā reporepo o ngā awa me ngā roto. Kitea ai i ngā wāhi kōhatu, ā, i ētahi wai hōhonu, iti rānei te wai me ngā pūmahana. Kāore e tino mōhiotia ngā arawai noho te kākahi. Ki ētahi rangahau ko te take ka noho ia i tētahi arawai na te rere o ngā ngaru, nā te whiwhi i te hāora, me te tau o ngā tāoke. Mehemea kāore e hiahia ki tērā taiao ka neke rātou ki tētahi atu rohe, wāhi rānei.

3.1 Position on the food chain



Apart from humans, known predators of kākahi include wading birds and kōura (freshwater crayfish). Tuna and other fish species may also prey on kākahi and land-dwelling animals such as rats probably eat them too. A type of insect larvae is a parasite for some kākahi populations. The larvae burrow in between the kākahi's two shells, sometimes causing shell deformities.

The kākahi lifecycle is complex and not all of it is understood. While most saltwater mussel species expel eggs and sperm for external fertilisation in the water, kākahi keep their eggs inside their shell to develop. The female kākahi takes in the male kākahi's sperm through one of her siphons, and her fertilised eggs are then held internally until they develop into larvae called 'glochidia'. About the size of a grain of sand, these glochidia are then 'sneezed' out of another of their mother's siphons, whereupon they latch onto a passing fish using a hook at the tip of their shell. Native kōaro (a galaxiid fish) are thought to be important 'hosts' for these glochidia, but they have also been found on tuna, bullies (a type of freshwater fish) and trout. The glochidia live on the fish for a few weeks, after which they drop off.

Arā atu anō ngā kaipatupatu i te kākahi ko te tangata, ko ngā manu, koura (wai Māori), te tuna, me ētahi atu momo ika me ngā kiore hoki. Ka piri ngā hēki a ngā ngārara ki te kākahi ā ka uru ki waenganui i o rātou anga ā ka ngunu ngā anga i ētahi wā.

He uaua te mataora o te kākahi kāore e tino mōhiotia ana. Noho tonu ngā hēki a te kākahi ki roto i tōna ana. Ka tangohia e te uwhā te wai tātea o te tāne ki tētahi o ōnā ngongo, ā ka mau tonu kia whiwhi hēki. Ka matihe, ka puta ngā heki i tētahi atu o ōna ngongo, puta ana, kua piri ki ngā ika e hipa haere ana. Kitea ai ngā heki i runga i te kōaro, te tuna me te tāraute. Ka noho ngā punua kākahi i runga i ngā ika mō ētahi wiki a ka makere iho.

3.2, 3.3 Significance and nature of relationships

The kōaro acts as one of the important host species for the tiny glochidia to hook onto after they have left their mother. They live on the host fish for a few weeks and then drop off to continue their development.

This provides a useful means of transport for kākahi allowing population growth while avoiding overcrowding. It also means that kākahi can move

upstream in flowing waterways and ensures wide dispersal and contributes to their survival.

He whai mana te kōaro ki te kākahi, nā te mea ko te kōaro te matua whāngai o ngā punua a te kākahi, ā, taka noa ka pakeke haere tonu. Nā tēnei ka tipu haere te kākahi i ngā wāhi katoa kāore e noho apiapi. Ka piki te kākahi i ngā aupiki, i ngā rerenga arawai, ā, ka mārara haere ki te whenua, ā, e noho ora tonu nei.

Note: Your ākonga has been asked to provide references. Where you have referred to a book, or website, or person, please acknowledge this in your lessons.

References

(need help? - Refer to the reference guide at the front inside page of this booklet)

Websites:

http://sciblogs.co.nz/waiology/2014/12/05/the-secret-lives-of-freshwater-mussels/

https://www.niwa.co.nz/our-science/freshwater/tools/kaitiaki_tools/species/kakahi

http://www.stuff.co.nz/dominion-post/news/local-papers/wairarapa-news/2488390/The-mysterious-freshwater-mussel

http://www.teara.govt.nz/en/photograph/8105/freshwater-mussel

http://collections.tepapa.govt.nz/topic/2508

http://researcharchive.vuw.ac.nz/xmlui/bitstream/handle/10063/839/thesis.pdf

http://www.gw.govt.nz/assets/Parks-and-Recreation/Wairarapa-Moana/Kakahi-Monitoring-GuideFinal.pdf

The images used are from websites ākonga may use photographs.

Assessment Schedule

Assessment Task			
This is a research project. Select and research a native freshwater fish species. The research findings must include:		The Research.	Please tick: N ☐ A ☐
Learning Outcomes	**Evidence Statements**	**Judgement Statements**	Please tick
Explain the selected native freshwater fish species whakapapa.	The whakapapa of the Tuna. Ranginui = Papatuanuku ↓ Te Ihorangi ↓ Tuna – Ngoiro - Tuere Longfin eel - Anguilla dieffenbachii Shortfin eel - Anguilla australis There are over 100 different tribal names for freshwater eels, describing their different colours and sizes.	The whakapapa of the selected native freshwater fish species was appropriate to the species	N ☐ A ☐
Explain the significance of tikanga Māori associated with the selected native freshwater fish species.	Tikanga varies from iwi to iwi but the main theme is always kaitiakitanga of the tuna resource. For Waikato-Tainui the first catch of every season is returned to the river, even if the net is full. Fish were allowed to die with dignity, and so they are not cooked straight from the river. When fishing, the tikanga is to only take what was needed. For Ngai Tahu tuna are traditionally caught between February and April during the last quarter of the moon (Hinepouri) when the nights were darker, and the eels had begun moving down the streams and into lakes, ready to migrate out to sea to spawn in the Pacific.	The significance of tikanga associated with the selected native freshwater fish species was ap-propriate to the species.	N ☐ A ☐

Assessment Task			
Describe the importance of the selected native freshwater fish species to a local iwi.	Tuna are very important for Māori and that is evidenced through our literature. Many marae around the motu are adorned with carvings of tuna alongside their tupuna. They were heavily relied upon by our tupuna as a source of kai and important events were often scheduled around the harvesting of tuna. They are kaitiaki of our streams, rivers, and lakes and they are used as environmental indicators for the health of our waterways.	The importance of the native freshwater fish species to a local iwi was described and researched appropriately.	N ☐ A ☐
Describe the environment of the selected native freshwater fish species in terms of its physical characteristics.	Tuna can be found throughout Aotearoa. They live mainly in rivers and inland lakes but can be found in almost all types of waters, usually well inland from the coast. Habitat loss affects tuna. Changes caused by hydro development, drainage, and irrigation schemes and river diversions reduce their habitat and the water available for aquatic life. Culverts and dams can also impact on eels by preventing their migration.	The environment of the native freshwater fish species was described in accordance with the species physical characteristics.	N ☐ A ☐
Describe the behavioural, feeding, and the territorial characteristics of the selected native freshwater fish species that enables it to survive in its own habitat.	Tuna are New Zealand's top native freshwater predators – no other species prey on them when they are adult. Tuna feed mainly at night, using their powerful sense of smell to track prey. Once an eel is close, taste buds on its head and sensors along its sides help locate the victim. Tuna can travel over land, slithering through wet grass to get to a pond or lake. As long as their skin stays moist, they can ab-sorb oxygen through it, surviving long periods out of water. Tuna have an omnivorous diet and are opportunistic feeders. Their diet as small eels largely consist of insect larvae. When eels become larger, they also feed on small fish, including galaxiids and trout Tuna are often found great distances inland along fresh waterways and in high country lakes which are connected to the sea. Aiding in their inland distribu-tion is their climbing ability in elver (juvenile) stage, under 12 cm in length. As juveniles, they prefer shallow water (under 0.5 m deep) with coarse sub-stratum and faster than average stream flow (such as that found in riffles). Adult longfin tuna tends to be found next to or under large pieces of debris and undercut river banks.	The behavioural, feeding and territorial characteristics of the native freshwater fish species was described appropriately.	N ☐ A ☐

Assessment Task			
Describe the position of the selected native fish species in the food chain of other freshwater species.	The life cycle of tuna is very complex, and during different life stages they rely on different habitats to live in and migrate through. They grow and mature into fertile adults in fresh water, then migrate to the sea to breed thousands of kilometers from New Zealand to their spawning grounds near Tonga. Tuna have an omnivorous diet. Small tuna eat insect larvae and larger tuna feed on small fish including galaxiids and trout. And tuna remain an important traditional food source for Māori.	The position of the selected native fish species in the food chain of other freshwater species was described appropriately.	N ☐ A ☐
Describe one significant relationship with another fish or plant species and the nature and contribution of that relationship to its own survival.	Tuna act as a controller in the fresh water eco-system. The relationship with other species is that they are a predator and can prey on all other freshwater fish including introduced species and other tuna. They ambush their prey and use their prodigious sense of smell to locate prey and sneak up on it from downstream. This predatory nature contributes to their survival.	The significant relationship with another fish or plant species and the nature and contribution of that relationship to its own survival was described appropriately.	N ☐ A ☐

Assessment Task			
This is a research project. Select and research a native freshwater shellfish species. The research findings must include:		The Research.	Please tick: N ☐ A ☐
Learning Outcomes	**Evidence Statements**	**Judgement Statements**	Please tick
Explain the selected native freshwater shellfish species whakapapa.	The whakapapa of the Kākahi. Ranginui = Papatuanuku ↓ Tangaroa ↓ Kiwa = Hine-moana ↓ Kākahi Common name: Freshwater mussel Scientific name: Echyridella menziesi Te Reo Māori names: includes kākahi, kāeo, and torewai.	The whakapapa of the selected native freshwater shellfish species was appropriate to the species.	N ☐ A ☐

Assessment Task			
Explain the significance of tikanga Māori associated with the selected native freshwater shellfish species.	Tikanga varies from iwi to iwi but the main theme is always kaitiakitanga of the tuna resource. For Waikato-Tainui the first catch of every season is returned to the river, even if the net is full. Fish were allowed to die with dignity, and so they are not cooked straight from the river. When fishing, the tikanga is to only take what was needed. For Ngai Tahu tuna are traditionally caught between February and April during the last quarter of the moon (Hinepouri) when the nights were darker, and the eels had begun moving down the streams and into lakes, ready to migrate out to sea to spawn in the Pacific.	The significance of tikanga associated with the selected native freshwater fish species was ap-propriate to the species.	N ☐ A ☐
Describe the importance of the selected native freshwater shellfish species to a local iwi.	Historically, kākahi have been very important to Māori. They were a source of food and their shells were used as tools. In many areas they remain a valued resource and cultural indicator for Māori.	The importance of the native freshwater shellfish species to a local iwi was described and researched appropriately.	N ☐ A ☐
Describe the environment of the selected native freshwater shellfish species in terms of its physical characteristics.	Kākahi are found in sheltered parts of rivers and streams where the bed is sandy or silty, and in lakes. Kākahi don't usually live in heavy gravel rivers as these rivers lack the stable and sheltered spots kākahi favour. They will hide under overhangs and around fallen branches out of the main flow along stream banks or buried in soft sediments on lake bottoms with only their siphons showing. Where you find one freshwater mussel there are likely to be more, sometimes many more.	The environment of the native freshwater shellfish species was described in accordance with the species physical characteristics.	N ☐ A ☐

Assessment Task			
Describe the behavioural, feeding, and the territorial characteristics of the selected native freshwater shellfish species that enables it to survive in its own habitat.	Kākahi are found in sheltered parts of rivers and streams where the bed is sandy or silty, and in lakes. They burrow into the sediment and are hugely efficient at filtering sediment out of the water. In the past, large beds of kākahi probably helped to maintain the clarity and quality of our waterways. A single mussel can filter around a 1 litre of water per hour, and so dense mussel populations can process the whole volume of a shallow lake in a matter of days, removing fine organic particles and sediment suspended in the water and increasing water clarity. Kākahi eat very small pieces of organic matter that are suspended in the water, such as algae and bacteria. They pump a steady stream of water through two tube-like siphons extending out through the gap in their two shells. Small edible particles are filtered out of the water and eaten. Inedible material is clumped together and ejected as 'pseudofaeces' (or false poos!). This 'filterfeeding' lifestyle means that kākahi pump enormous quantities of water through their siphons. Kākahi usually live partially buried in mud and sand in the beds of lakes and rivers, but they are also found in areas with cobbly or stony bottoms. Kākahi are found in a range of water depths and temperatures. Very little is known about what determines the waterways in which kākahi choose to live. Some research has indicated that kākahi distributions may be influenced by factors such as wave action, oxygen availability and the presence of toxins. If they don't like where they currently live, they can move elsewhere using their muscular 'foot'.	The behavioural, feeding and territorial characteristics of the native freshwater shellfish species was described appropriately.	N ☐ A ☐

Assessment Task			
Describe the position of the selected native shellfish species in the food chain of other freshwater species	Apart from humans, known predators of kākahi include wading birds and kōura (freshwater crayfish). Tuna and other fish species may also prey on kākahi and land-dwelling animals such as rats probably eat them too. A type of insect larvae is a parasite for some kākahi populations. The larvae burrow in between the kākahi's two shells, sometimes causing shell deformities. The kākahi lifecycle is complex and not all of it is understood. While most saltwater mussel species expel eggs and sperm for external fertilisation in the water, kākahi keep their eggs inside their shell to develop. The female kākahi takes in the male kākahi's sperm through one of her siphons, and her fertilised eggs are then held internally until they develop into larvae called 'glochidia'. About the size of a grain of sand, these glochidia are then 'sneezed' out of another of their mother's siphons, whereupon they latch onto a passing fish using a hook at the tip of their shell. Native kōaro (a galaxiid fish) are thought to be important 'hosts' for these glochidia, but they have also been found on tuna, bullies (a type of freshwater fish) and trout. The glochidia live on the fish for a few weeks, after which they drop off.	The position of the selected native shellfish species in the food chain of other freshwater species was described appropriately.	N ☐ A ☐
Describe one significant relationship with another fish or plant species and the nature and contribution of that relationship to its own survival.	The kōaro acts as one of the important host species for the tiny glochidia to hook onto after they have left their mother. They live on the host fish for a few weeks and then drop off to continue their development. This provides a useful means of transport for kākahi allowing population growth while avoiding overcrowding. It also means that kākahi can move upstream in flowing waterways and ensures wide dispersal and contributes to their survival.	The significant relationship with another fish or plant species and the nature and contribution of that relationship to its own survival was described appropriately.	N ☐ A ☐

Overall grade (please circle)	N (Not Achieved)	A (Paetae/Achieved)

Ākonga name		Assessor Name	
Ākonga signature		Assessor signature	

Completion date	

Notes:

Notes:

FIELD MĀORI ASSESSMENT SUPPORT MATERIAL

TĪKAROHIA TE MARAMA
REALISE YOUR POTENTIAL

LEVEL 2

MAHINGA KAI

UNIT STANDARD 25469 (VERSION 5)

Explain crop propagation in accordance with tikanga and crop requirements.

(Level 2, Credits 6)

ASSESSOR BOOKLET

NZQA
Mana Tohu Mātauranga o Aotearoa
New Zealand Qualifications Authority

MQS
Māori Qualifications Services
Te Ohu Tohu Mātauranga Māori

Assessor Information

There is ONE (1) OVER-ALL assessment task that the ākonga must correctly complete to gain credits for this standard. The task is divided into THREE (3) tasks that the ākonga must complete to be awarded the credits for this unit standard.

Evidence for Paetae/Achieved

All assessment evidence should be collected by the assessor and retained for assessment and moderation purposes (such as portfolio, answer sheets, audio or digital).

You will need to discuss with the ākonga the length of time they must complete the assessment. There are many ways ākonga may present their evidence. They may use:

- PowerPoint and talk to their presentation.
- Illustrations using images and identifying designs etc.
- Write descriptive essays, maintain a visual diary etc

Ākonga booklet

The ākonga receives this. It outlines important information for the ākonga including:

- assessment and other information
- assessment tasks.

Ākonga assessment tasks

These sheets and any other evidence should be collected by the Assessor and retained for assessment and moderation purposes.

Where ākonga choose to provide oral description/evidence, this must be recorded (i.e. recorded onto a digital device) or verified by a credible verifier, ie. a person with knowledge skills, experience and mana. Where ākonga work has been selected for moderation, the file and/or attestation form must be included with the materials.

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3 **Film**

Māori Television (Producer). (2016). Iwi Anthems, Series 2 Episode 5 [video file]. Retrieved from: http://www.maoritelevision.com/tv/shows/iwi-anthems/S02E005/iwi-anthems-series-2-episode-5.

4 **Magazine/Newspaper article – popular/trade/general interest**

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6 **Webpage**

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LEVEL 2

ASSESSOR INFORMATION – ASSESSMENT TASKS

Name		NSN #	

SELECT TWO ROOT AND TWO SEED GROWN CROPS" and EXPLAIN the PROPAGATION of crops in accordance with selected crops requirements and local tikanga.

Root grown crops may include but are not limited to – kūmara, rīwai, taro, beets, turnips and parsnips.

Selection must include kūmara or rīwai and one other root grown crop.

Seed grown crops must include one of – kānga, kamokamo, or paukena.

Remember: Evidence must –

- include TWO (2) root grown and TWO (2) seed grown crops is required in all activities
- meet the requirements of crops and local tikanga.

Outcome 1	**Explain the selection and preparation of a crop for propagation in accordance with tikanga and crop requirements.**

Assessment Task 1

Explain how to select and prepare crops for propagation.
Explnation includes TWO (2) criteria to select crops for propagation that may include but is not limited to: • size • shape • number of eyes • female • male.
Explaination includes TWO (2) processes to prepare crops for propagation that may include but is not limited to: • quality • preservation.

A visual display and/or an oral description may include but is not limited to a PowerPoint or poster presentation. If ākonga choose to provide a visual display and/or an oral description, this must be recorded (i.e. recorded onto a digital device). If ākonga work has been selected for moderation, the file must be included with the materials.

This task assesses the evidence requirements of 1.1 and 1.2.

1.1 The selection criteria of the crop for propagation are explained in accordance with crops requirements and local tikanga.

Range may include but is not limited to – size, shape, number of eyes, female, male; evidence of two is required.

1.2 The preparation process of crop for propagation is explained in accordance with crop requirements and local tikanga.

Range may include but is not limited to – quality, preservation; evidence of two is required.

Outcome 2	Explain the preparation process of the propagation bed in accordance with tikanga and crop requirements.

Assessment Task 2

Explain how to prepare the propagation bed for crops.		
Explanation includes TWO (2) processes to make up the propagation bed that may include but is not limited to:		
• environment • soil variances	• adequate light • materials.	
Explaination includes TWO (2) processes to modify and develop the soil for propagation that may include but is not limited to:		
• aeration	• temperature	• drainage.

This task assesses the evidence requirements of 2.1 and 2.2.

2.1 The preparation proce ss to make up the propagation bed is explained in accordance with crop requirements and local tikanga.

Range may include but is not limited to – environment, soil variances, adequate light, materials; evidence of two is required.

2.2 The preparation process to modify and develop the soil for propagation is explained in accordance with crop requirements and local tikanga.

Range may include but is not limited to aeration, temperature, drainage; evidence of two is required.

Outcome 3	Explain the propagation of crops and maintenance of the propagation bed in accordance with tikanga and crop requirements.

Assessment Task 3

Explain when to propagate crops, and how to maintain the propagation bed.
Explanation includes TWO (2) propagation methods for crops that may include but is not limited to: • single layer • spacing • straight line.
Explanation includes TWO (2) requirements for the maintenance of the propagation bed that may include but is not limited to: • water levels • moisture • disease • animal infestation • rua/pakoro • whata.

This task assesses the evidence requirements of 3.1, 3.2, 3.3.

3.1 The propagation season for crops are explained in accordance with crop requirements and local tikanga.

Range maramataka, Matariki.

3.2 The propagation methods for crops are explained in accordance with crop requirements and local tikanga.

Range may include but is not limited to – single layer, spacing, straight line; evidence of two is required.

3.3 The maintenance of the propagation bed is expained in accordance with crop requirements and local tikanga.

Range may include but is not limited to – water levels, weeds, moisture, disease, animal infestation, rua/pakoro, whata; evidence of two is required.

An example of an answer that would be acceptable for task 1 – Native Freshwater Shellfish.

Example answers:

SELECTION AND PREPARATION OF CROPS FOR PROPAGATION.

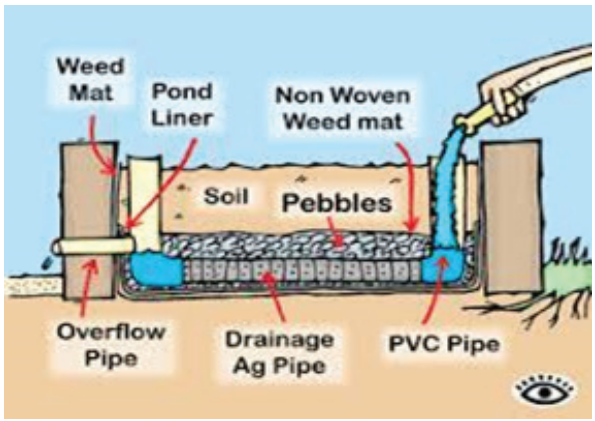
Kūmara tubers for propagation must be of good quality. Generally, the shape and size does not matter. The healthiest, strongest kūmara tubers are selected to avoid problems like diseases

To modify and develop the soil gravel and sand were added to the soil to allow for aeration and drainage and to maintain the temperature.

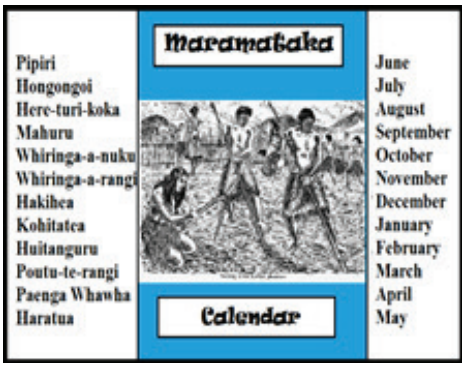
Kūmara tipu or slips are the equivalent of a seedling or seed that grow into tubers. Once the shoots are a good size, they are detached from the kūmara and kept temporarily in water until ready to plant out.

The shoots which eventually grow tubers, are the stems with nodules on them. The more nodules, the better.

MATERIALS TO MAKE UP PROPAGATION BED.



PROPAGATION SEASON



Here-turi-koka – the kowhai should begin to bloom, signalling the time for the kumara to be planted in shallow beds for sprouting\

Māori planted kūmara on the nights called Ōuenuku, Ari, Rākau-ma-tohi,Takirau, and Orongonui which were the 4th, 9th, 16th, 17th, 18th and 27th nights of the lunar moon.

PROPAGATION METHODS

Single layer and in a straight line.

MAINTENANCE OF PROPAGATION BED

The propagation bed must be weed free. A water system has been attached to control the water levels and moisture to enable the crops to propagate.

WEEDING METHODS

The propagation bed must be weed free. A water system has been attached to control the water levels and moisture to enable the crops to propagate.

References

(need help? - Refer to the reference guide at the front inside page of this booklet)

http://irrigationnz.co.nz/news-resources/irrigation-resources/contract/

http://www.podgardening.co.nz/kumara.html

http://www.koanga.org.nz/knowledgebase/seed-knowledge/seed-growers/growing-kumara-seed-growers/

http://www.kumara.co.nz/growing-kumara1.html

http://www.kumara.co.nz/kumara---an-essay.html

Note: Your ākonga has been asked to provide references. Where you have referred to a book, or website, or person, please acknowledge this in your lessons.

Assessment Schedule

Assessment Task			
SELECT TWO ROOT AND TWO SEED GROWN CROPS" and EXPLAIN the PROPOGATION of crops in accordance with crops requirements and local tikanga. Root grown crops may include but are not limited to – kūmara, rīwai, taro, beets, turnips and parsnips. Selection must include kūmara or rīwai and one other root grown crop. Seed grown crops must include one of – kānga, kamokamo, or paukena.		TWO ROOT grown crops which of at least one crop selected is kūmara or rīwai. TWO SEED grown crops which of at least one crop selected is either kāinga, paukena or kamokamo.	
Task 1: Explain how to select and prepare crops for propagation	**Evidence Statements**	**Judgement Statements**	Please tick
Explanation includes TWO (2) criteria to select crops for propagation. That may include but is not limited to: • size • shape • number of eyes • female • eyes. Explanation includes TWO processes to prepare crops for propagation. That may include but is not limited to: • quality • preservation	Refer to sample answers	TWO (2) processes for the selection of crops for propagation are explained in accordance with: • crops requirements, and • tikanga. TWO (2) processes for the preparation of crops for propagation are explained in accordance with: • crops requirements, and • tikanga.	N ☐ A ☐

LEVEL 2

Assessment Task			
Task 2: Explain how to prepare the propagation bed	Evidence Statements	Judgement Statements	
Explanation includes TWO (2) processes to make up the propagation bed That may include but is not limited to; • environment • soil variances • adequate light • materials. Explanation includes TWO (2) processes to modify and develop the soil for the propagation bed. That may include but is not limited to; • aeration • temperature • drainage.	Refer to sample answers	TWO (2) processes to make up the propagation bed are described in accordance with: • crops requirements • local tikanga. TWO processes to modify and develop the soil for the propagation bed are explained in accordance with: • crops requirements, and • meet local tikanga.	Please tick: N ☐ A ☐
Task 3: Explain when and how to propagate crops and maintain the propagation bed	**Evidence Statements**	**Judgement Statements**	
Explanation includes seasons for propagation of crops. • maramataka • observations of Matariki Explanation includes TWO (2) propagation methods for crops. That may include but is not limited to: • single layer • spacing • straight line. Explanation includes TWO (2) requirements for the maintenance of the propagation bed. That may include but is not limited to: • water levels • weeds • moisture • disease • animal • infestation • rua/pakoro/whata.	Refer to sample answer	Seasons to propagate crops are explanation in accordance with: • crops requirements, and • local tikanga. TWO (2) propagation methods are described in accordance with: • crops requirements, and • local tikanga. TWO (2) requirements for the maintenance of the propagation bed are explained in accordance with: • crops requirements, and • local tikanga.	Please tick: N ☐ A ☐

Overall grade (please circle)	N (Not Achieved)	A (Paetae/Achieved)

Ākonga name		Assessor Name	
Ākonga signature		Assessor signature	

Completion date	

Notes:

FIELD MĀORI ASSESSMENT SUPPORT MATERIAL

TĪKAROHIA TE MARAMA
REALISE YOUR POTENTIAL

LEVEL 2

MAHINGA KAI

UNIT STANDARD 25471 (VERSION 5)

Explain the cultivation of crops in accordance with tikanga and crop requirements

(Level 2, Credits 6)

ASSESSOR BOOKLET

NZQA
Mana Tohu Mātauranga o Aotearoa
New Zealand Qualifications Authority

MQS
Māori Qualifications Services
Te Ohu Tohu Mātauranga Māori

Assessor Information

There is ONE (1) OVER-ALL assessment task that the ākonga must correctly complete to gain credits for this standard. The task is divided into THREE (3) tasks that the ākonga must complete to be awarded the credits for this unit standard.

Evidence for Paetae/Achieved

All assessment evidence should be collected by the assessor and retained for assessment and moderation purposes (such as portfolio, answer sheets, audio or digital).

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- PowerPoint and talk to their presentation.
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MQS Māori Qualifications Services Te Ohu Tohu Mātauranga Māori

ASSESSOR INFORMATION – ASSESSMENT TASKS

Name		NSN #	

SELECT TWO ROOT AND TWO SEED GROWN CROPS" and EXPLAIN the CULTIVATION of crops in accordance with selected crops requirements and local tikanga.

Root grown crops may include but are not limited to – kūmara, rīwai, taro, beets, turnips and parsnips.

Selection must include **kūmara** or **rīwai** and one other root grown crop.

Seed grown crops must include one of – kānga, kamokamo, or paukena.

Outcome 1 **Explain the preparation of the māra for cultivation in accordance with tikanga and crop requirements.**

Assessment Task 1

Explain the preparation of the māra for cultivation
Explanation includes: TWO (2) processes to select and prepare the māra site for cultivation that may include but is not limited to – • environment • adequate light • orientation • aspect • soil variances.
Explaination includes TWO (2) processes to prepare the soil of the māra for cultivation that may include but is not limited to – • weed free • friable • moisture content.
Explaination includes: • TWO (2) processes to modify and develop the soil of the māra for cultivation that may include but is not limited to – • aeration • temperature • drainage.

A visual display and/or an oral description may include but is not limited to a PowerPoint or poster presentation. If ākonga choose to provide a visual display and/or an oral description, this must be recorded (i.e. recorded onto a digital device). If ākonga work has been selected for moderation, the file must be included with the materials.

This task assesses the evidence requirements of 1.1 and 1.2.

1.1 Site selection and preparation for cultivation is explained in accordance with crops requirements and local tikanga
Range environment, adequate light, orientation, aspect, soil variances;
evidence of two is required.

1.2 The soil preparation for cultivation is explained in accordance with crop requirements and local tikanga.
Range includes but is not limited to – weed free, friable, moisture content; evidence of two is required.

1.3 The preparation to modify and develop the soil for cultivation is explained in accordance with crop requirements and local tikanga.
Range includes but is not limited to – aeration, temperature, and drainage; evidence of two is required.

Outcome 2 **Explain the planting of the crops in accordance with tikanga and crop requirements**

Assessment Task 2

Explain the planting of crops
Explanation includes TWO (2) seasons for planting crops that includes – • the māramataka, and • observations of Matariki.
Explanation includes TWO (2) methods for planting crops that may include but is not limited to: • single layer • spacing • straight line • contour • aspect.

This task assesses the evidence requirements of 2.1 and 2.2.

1.1 The seasons for the planting of the crops are explained in accordance with crop requirements and local tikanga.

Range maramataka, observations from Matariki.

1.2 Methods for planting crops are explained in accordance with crop requirements and local tikanga.

Range single layer, spacing, straight line, orientation, contour, aspect; evidence of two is required.

Outcome 3 **Explain the maintenance of crops in accordance with tikanga and crop requirements.**

Assessment Task 3

Explain the maintenance of crops.
Explanation includes TWO (2) irrigation systems used to maintain crops that may include but is not limited to: • natural • hand held • automatic.
Explanation includes:TWO (2) furrowing and mounding methods used to maintain crops that may include but is not limited to – • manual • mechanical.
Explanation includes: TWO (2) fertiliser applications used to maintain crops that may include but is not limited to – • natural • matter • artificial.

LEVEL 2

Explain the maintenance of crops.
Explanation includes: TWO (2) weeding methods used to maintain crops that includes – • manual • mechanical.

This task assesses the evidence requirements of 3.1, 3.2, 3.3, 3.4.

3.1 Irrigation systems used to maintain the crops are explained in accordance with crop requirements and local tikanga.

Range may include but is not limited to – natural, hand held, automatic;

evidence of two of each is required.

3.2 Furrowing and mounding methods for crops are explained in accordance with crop requirements and local tikanga.

Range manual mechanical.

3.3 Fertiliser applications for crops are explained in accordance with crop requirements and local tikanga.

3.4 Weeding methods for crops are explained in accordance with crop requirements and local tikanga.

Range manual weeding, mechanical.

EXAMPLE ANSWERS

PREPARATION OF SITE FOR CULTIVATION

	As the kūmara is a long season tropical vegetable, select a site with plenty of sunshine and well-drained soil. Sloping land with a sunny, northerly aspect is considered ideal for planting kūmara. The soil must be weed free, friable, and contain the right moisture content
	To modify and develop the soil, gravel and sand were added to the soil to allow for aeration and drainage and to maintain the temperature.

SEASON AND PLANTING

Observation from Matariki

He tohu nā Matariki. If the stars were clear, and bright it was an indication there would be a good season for planting; if not they would delay the planting until the weather got warmer.

Te Maramataka: Planting season normally from October through to December.

Māori farmers planted kūmara (sweet potato) on the nights called Ōuenuku, Ari, Rākau-nui, Rākau-ma-tohi, Takirau and Ōrongonui, which were the 4th, 9th, 16th, 17th, 18th and 27th nights of the lunar month

http://www.teara.govt.nz/en/maramataka-the-lunar-calendar/page-3

Methods of planting kūmara

Kūmara are planted in the contour of mounds that can be single layered, and spaced out to give the crop room to grow. Use your hands or a trowel to open a planting hole where one tuber or tipu is planted.

MAINTENANCE OF CROPS

Irrigation

Kūmara plants must be kept evenly moist, but not too wet. Water deeply during dry periods. Hose and watering will be enough for small kūmara gardens.

Sprinkler water is distributed through a system of pipes. It is sprayed into the air through sprinklers. Kūmara need regular watering.

Mounding

The best way to grow kūmara in an open garden is to mound up soil, sand, rotted manure and compost into a shallow hill that is as wide and if the area you want to plant in. This hill should be about one and a half hands deep. When planting, cover most of the stem by burying long ways so the stem is horizontal into the prepared raised rows or mounds.

Furrowing

The tupu are planted in the standard commercial spacing of rows 30 inches apart, and the plants about 12 inches apart within the row. The Lands use a horse drawn furrower to make ridges and furrows, and plant the kūmara along the top of the ridges. The plants are watered for the first few days, and then the only other input up until harvesting is weeding.

Fertiliser is a solid or liquid material that is applied to a soil to make it more fertile, and therefore boost plant growth.

FERTILISER APPLICATIONS

Wood Ash

Use only ash from non-preservative treated wood. Wood ash provides potassium carbonate (potash) which enriches poor soils and helps them retain water, amongst other benefits.

Sprinkle a big handful per square metre over your garden several times a year. Wood ash also contains calcium carbonate, which is often used instead of lime to increases soil alkalinity. So, although potassium is an essential element needed by plants, because of the calcium carbonate in wood ash, don't overdo it on acid loving plants.

Mixing wood ash with other materials such as manure and straw helps provide nitrogen, and

Tui Potato Fertiliser before planting and during the season to encourage good growth and tuber development. Can be used in all areas of the home garden, replenishing soil with much needed nutrients. This all-purpose plant food can be used in vegetables, flowers, trees and shrubs

Weeding methods

Weed management is essential in plant beds and in the field.

Kūmara need plenty of room, so weeding the crop is essential throughout the growing period. Careful weed control practices are essential to prevent damage to the crop and the environment.

References

(need help? - Refer to the reference guide at the front inside page of this booklet)

http://irrigationnz.co.nz/news-resources/irrigation-resources/contract/

http://www.podgardening.co.nz/kumara.html

http://www.koanga.org.nz/knowledgebase/seed-knowledge/seed-growers/growing-kumara-seed-growers/

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Note: Your ākonga has been asked to provide references. Where you have referred to a book, or website, or person, please acknowledge this in your lessons.

Assessment Schedule

Assessment Task			
SELECT TWO ROOT AND TWO SEED GROWN CROPS" and EXPLAIN the CULTIVATION of crops in accordance with crops requirements and local tikanga. Root grown crops may include but are not limited to – kūmara, rīwai, taro, beets, turnips and parsnips. Selection must include kūmara or rīwai and one other root grown crop. Seed grown crops must include one of – kānga, kamokamo, or paukena.		TWO ROOT grown crops which of at least one crop selected is kūmara or rīwai. TWO SEED grown crops which of at least one crop selected is either kāinga, paukena or kamokamo.	
Task1: Explain the preparation of the māra for cultivation	**Evidence Statements**	**Judgement Statements**	Please tick
EXPLAIN TWO (2) processes to select and prepare the māra site for cultivation. That may include but is not limited to: • environment • adequate light • orientation • aspect • soil variances. EXPLAIN TWO processes to prepare the soil of the māra for cultivation. That may include but is not limited to: • weed free • friable • moisture content. EXPLAIN TWO (2) processes to modify and develop the soil of the māra for cultivation.That may include but is not limited to: • aeration • temperature • drainage.	Refer to sample answers	TWO (2) processes for the selection of crops for propagation are explained in accordance with: • crops requirements, and • local tikanga. TWO (2) processes for the preparation of crops for propagation are explained in accordance with: • crops requirements, and • local tikanga.	N ☐ A ☐

Assessment Task			
Task 2: Explain planting of crops	**Evidence Statements**	**Judgement Statements**	Please tick
EXPLAIN seasons for planting crops. • maramataka • observations of Matariki. EXPLAIN TWO (2) methods for planting crops. That may include but is not limited to: • single layer • spacing • straight line • contour aspect.	Refer to sample answers	The seasons for planting are explained in accordance with: • crops requirements • local tikanga. TWO methods for planting crops are explained in accordance with: • crops requirements, and • meet local tikanga.	N ☐ A ☐
Task 3: Explain the maintenance of crops.	**Evidence Statements**	**Judgement Statements**	Please tick
EXPLAIN TWO (2) irrigation systems used to maintain crops That may include but is not limited to: • natural • hand held • automatic. EXPLAIN TWO (2) furrowing and mounding methods to maintain crops. That may include but is not limited to: • manual • mechanical. EXPLAIN TWO (2) fertiliser applications used to maintain crops. That may include but is not limited to: • natural • organic matter • artificial. EXPLAIN TWO (2) weeding methods used to maintain crops. That includes manual weeding and mechanical.	Refer to sample answers	TWO (2) irrigation systems used to maintain crops are explained in accordance with: • crops requirements, and • local tikanga. TWO (2) furrowing and mounding methods are explained in accordance with: • crops requirements, and • local tikanga. TWO (2) fertilising applications selected are explained in accordance with: • crops requirements, and • local tikanga. TWO (2) weeding methods are explained in accordance with: • crops requirements, and • local tikanga.	N ☐ A ☐

Overall grade (please circle)	N (Not Achieved)	A (Paetae/Achieved)

Ākonga name		Assessor Name	
Ākonga signature		Assessor signature	

Completion date	

Notes:

Notes:

FIELD MĀORI ASSESSMENT SUPPORT MATERIAL

TĪKAROHIA TE MARAMA
REALISE YOUR POTENTIAL

LEVEL 2

MAHINGA KAI

UNIT STANDARD 25474 (VERSION 5)

Explain the harvesting of crops in accordance with tikanga and crop requirements

(Level 2, Credits 6)

ASSESSOR BOOKLET

NZQA
Mana Tohu Mātauranga o Aotearoa
New Zealand Qualifications Authority

MQS
Māori Qualifications Services
Te Ohu Tohu Mātauranga Māori

Assessor Information

There is ONE (1) OVER-ALL assessment task that the ākonga must correctly complete to gain credits for this standard. The task is divided into THREE (3) assessment tasks that the ākonga must complete to be awarded the credits for this unit standard.

Evidence for Paetae/Achieved

All assessment evidence should be collected by the assessor and retained for assessment and moderation purposes (such as portfolio, answer sheets, audio or digital).

You will need to discuss with the ākonga the length of time they must complete the assessment. There are many ways ākonga may present their evidence. They may use:

- PowerPoint and talk to their presentation.
- Illustrations using images and identifying designs etc.
- Write descriptive essays, maintain a visual diary etc.

Ākonga booklet

The ākonga receives this. It outlines important information for the ākonga including:

- assessment and other information
- assessment tasks.

Ākonga assessment tasks

These sheets and any other evidence should be collected by the Assessor and retained for assessment and moderation purposes.

Where ākonga choose to provide oral description/evidence for Task 3, this must be recorded (i.e. recorded onto a digital device) or verified by a credible verifier, ie. a person with knowledge skills, experience and mana. Where ākonga work has been selected for moderation, the file and/or attestation form must be included with the materials.

Where a recording of the demonstration is submitted for moderation, the ākonga identification sheet (refer following link: http://www.nzqa.govt.nz/assets/Providers-and-partners/Assessment-and-moderation/mod-visevidence-cvr.doc) must be included.

You will need to discuss with the ākonga the length of time they must complete the assessment. He ture-a-kōnui: one credit equates to 10 notional hours of teaching, practice and/or study, and assessment.

Authenticity

As per NZQA requirements, the assessor must:

- verify that the work submitted for assessment has been produced by the ākonga
- consider (and manage) the potential for work to have been copied, borrowed from another ākonga, photocopied from a book or downloaded from the internet.

Ākonga may work with and learn from others to gather information from a variety of sources. However, you must be clear that the work to be assessed has been processed and produced by the ākonga.

To help manage authenticity of ākonga work, where the ākonga is asked to complete any written tasks, the ākonga is asked to use their own words as well as provide reference/s for their information. Please ensure you discuss this with your ākonga.

For further information, please refer to the following link:

http://www.nzqa.govt.nz/providers-partners/assessment-and-moderation/assessment-of-standards/generic-resources/authenticity/.

Referencing

This assessment requires the ākonga to reference his/her information. For the purposes of this assessment, the following are examples of reference styles.

EXAMPLES OF REFERENCING STYLES

1 **Book**

King, M. (2000). *Wrestling with the angel: A life of Janet Frame*. Auckland, New Zealand: Viking.

2 **Course handout/Lecture notes (electronic version)**

Archard, S., Merry, R., & Nicholson, C. (2011). Karakia and waiata [PowerPoint slides]. Retrieved from TEPS757-11B (NET): Communities of Learners website: http://elearn.waikato.ac.nz/mod/resource/view.php?id=174650.

3 **Film**

Māori Television (Producer). (2016). Iwi Anthems, Series 2 Episode 5 [video file]. Retrieved from: http://www.maoritelevision.com/tv/shows/iwi-anthems/S02E005/iwi-anthems-series-2-episode-5.

4 **Magazine/Newspaper article – popular/trade/general interest**

Fox, D. (2015, 15 September). Viewpoint: Not one more acre. *Mana*. Retrieved from: http://www.mana.co.nz/heritage/viewpoint.html.

5 **Personal Communication (letters, telephone conversations, emails, personal interviews, private social networking) – no reference list entry required (not recoverable); however, for quoting or citing in text**

J. Jackson, personal communication, March 12, 2011.

6 **Webpage**

New Zealand Trade and Enterprise. (n.d.). Agribusiness. Retrieved from https://www.nzte.govt.nz/en/export/market-research/agribusiness/.

PREPARATION FOR MODERATION

It is no longer necessary to complete a Moderation Cover Sheet as this information is entered online. If physical materials are sent for moderation, please ensure name of school and standard are included.

Digital submissions can be made directly through the application at any time.

Using the online External Moderation Application, schools and providers must include:

1. a copy of the task and any key supporting resources
2. a copy of the assessment schedule
3. up to FOUR (4) samples of student work consisting of the key materials that the assessor has used to make an assessment judgement. (ungraded unit standards: schools – 4 learner samples; providers – 3 learner samples).

For moderation to occur:

4. all files must be viewable online
5. URLs, e.g. for student created websites, will need to be submitted as links within a document.

For more information on the digital moderation process, please contact your Principal Nominee or Moderation Liaison (ML).

If you have any issues with preparing materials for moderation OR do not have materials to submit (ie you didn't assess this standard), **speak** to your Principal Nominee (PN) or Moderation Liaison (ML).

ASSESSOR INFORMATION – ASSESSMENT TASKS			
Name		NSN #	

SELECT TWO ROOT and TWO SEED GROWN CROPS" and EXPLAIN the HARVESTING of crops in accordance with local tikanga.

Root grown crops may include but are not limited to – kūmara, rīwai, taro, beets, turnips and parsnips.

Selection must include kūmara or rīwai and one other root grown crop.

Seed grown crops must include one of – kānga, kamokamo, or paukena.

Outcome 1 **Explain the preparation process for harvesting of crops in accordance with tikanga and crop requirements.**

Assessment Task 1

Explain preparation process for harvesting crops.
Explanation includes: ONE (1) tikanga either before harvesting OR after harvesting of crops that may include – • mana atua • mana whenua • mana tangata.
Explanation includes: TWO (2) equipment and tools for harvesting – • manual tools • mechanical tools.

This task assesses the evidence requirements of 1.1 and 1.2.

1.1 Tikanga in relation to pre-or-post harvesting of crops is explained in accordance with tikanga.
Range may include but is not limited to – mana atua, mana whenua, mana tangata;
evidence of two is required.

1.2 Equipment and implements for harvesting are described in accordance with crop requirements and tikanga.
Range manual tools, mechanical tools;
evidence of two is required.

Outcome 2 **Explain the importance of timing in the harvesting of crops in accordance with tikanga and crop requirements.**

Assessment Task 2

Explain the importance of timing in the harvesting of crops.
Explanation includes: (2) optimum times for harvesting crops that may include – • aspects of maturity • maramataka • observation of Matariki • companion planting. Explanation includes ONE (1) manual and ONE (1) mechanical method of harvesting crops.

This task assesses the evidence requirements of 2.1 and 2.2.

2.1 Optimum timing in relation to the harvesting of crops is explained in accordance with crop requirements and tikanga.
Range aspects of maturity, maramataka, observation of Matariki, companion planting; evidence of two is required.

1.2 Harvesting methods are explained in accordance with crop requirements and local tikanga.
Range manual, mechanical; evidence of one of each method is required.

Outcome 3 **Explain the preparation process of crops for storage and grading in accordance with tikanga and crop requirements.**

Assessment Task 3

Explain the preparation process of crops for storage during harvest
Explanation includes: TWO (2) processes for grading of crops for storage during harvest that may include but is not limited to – • seeds for re-generation • animal feed • whānau consumption • marketing.
Explanation includes: ONE (1) storage facility – • indoor • outdoor.

This task assesses the evidence requirements of 3.1, 3.2.

3.1 The preparation process for grading of crops for storage during harvest is described in accordance with local tikanga practises.
Range grading includes but is not limited to – seeds for regeneration, animal feed, whānau consumption, marketing; evidence of two is required.

3.2 The storage of graded crops during harvest is described in accordance with local tikanga practises.
Range may include but is not limited to – outdoors, indoors; evidence of one is required.

LEVEL 2

Resource Information

Mana Atua

Rongomātāne – the god of peace and is generally portrayed as the creator of the kūmara and cultivated plants.

The first fruits of the harvest are offered to Rongomātāne.

http://2manako2014.blogspot.co.nz/2014/04/rongomatane.html

Mana Tangata

Traditionally by the time of the ascension of Matariki, food crops had been harvested and the storehouses would be well stocked. Hākari or feasts were common. Other food gathering activities would cease. Communities would be able to participate in celebrations with a focus on activities related to learning and the arts, with weaving, singing and performing, wānanga and the learning of whakapapa being some examples.

http://christchurchcitylibraries.com/Education/MatauranGaMaori/MatarikiTeacherResourcePack.pdf

Manual Tools

Forks for digging up the crops and kete to carry them to storage.

Mechanical Tools

The tractors with the harvester attached will collect the rīwai and take them to be sorted and graded.

Companion planting is planting different crops together so they can help each other to grow better.

Such as sweetcorn does well planted with rīwai, peas and beans.

Aspects of maturity is when a crop reach a period of maximum quality or that is when they ripen or mature it is time to harvest them. If left exposed to the elements they will rot.

Manual harvesting of rīwai using fork.

So as not to damage the tuber the fork is dug from the side, grab the plant give it a little shake so the tubers would fall.

Rīwai harvesting machine

The harvester is attached to the tractor and it turns the dirt digging up the rīwai as it moves forward.

After digging up the tubers they are left for a few hours to dry. The loose soil is brushed from the tubers and then the tubers are stored.

http://www.agardenforthehouse.com/2010/04/how-to-plant-grow-harvest-store-potatoes/

LEVEL 2

The rīwai are graded before they are stored to make sure that all the rīwai with nicks and bites caused in the harvest are taken out and don't contaminate or rot the rest of the crop while in storage.

http://indulgy.com/post/Y9jiyoGdD1/maori-food-storage

Assessment Schedule

Assessment Task			
Overall Task: SELECT TWO ROOT and TWO SEED GROWN CROPS and EXPLAIN the HARVESTING of crops in accordance with local tikanga. Root grown crops may include but are not limited to – kūmara, rīwai, taro, beets, turnips and parsnips. Selection must include kūmara or rīwai and one other root grown crop. Seed grown crops must include one of – kānga, kamokamo, or paukena.		PROPAGATION INSTRUCTION MANUAL TWO ROOT grown crops which of at least one crop selected is kūmara or rīwai. TWO SEED grown crops which of at least one crop selected is either kāinga, paukena or kamokamo.	
Task 1: Explain preparation process for harvesting crops	**Evidence Statements**	**Judgement Statements**	Please tick
Explanation includes ONE (1) tikanga either before harvesting OR after harvesting of crops. That may include: • Mana Atua • Mana Whenua • Mana Tangata. Explanation includes: TWO (2) manual tools, and TWO (2) mechanical tools for harvesting of crops.	Refer to sample answers	One tikanga was explained appropriately in accordance with tikanga: • Mana Atua • Mana Whenua • Mana Tangata. TWO manual and TWO mechanical tools were appropriately described in accordance with crops requirements and local tikanga	N ☐ A ☐
Task 2: Explain preparation process for harvesting crops	**Evidence Statements**	**Judgement Statements**	Please tick
Explanation includes TWO (2) optimum times when to harvest crops. That may include: • aspects of maturity • maramataka • observation of Matariki • companion planting. Explanation includes: ONE (1) manual, and ONE (1) mechanical method of harvesting crops.	Refer to sample answers.	TWO optimum times to harvest crops was described in accordance with crops requirements and tikanga • aspects of maturity • maramataka • observations of Matariki • companion planting. TWO harvesting methods were described in accordance with crops requirements and local tikanga. • ONE manual • ONE mechanical.	N ☐ A ☐

Assessment Task			
Task3: Explain the preparation process of crops for storage during harvest	**Evidence Statements**	**Judgement Statements**	Please tick
Explanation includes TWO (2) processes for grading of crops for storage during harvest. That may include but is not limited to: • seeds for re-generation • animal feed • whānau consumption • marketing. Explanation includes ONE (1) storage facility for graded crops during harvest either, indoor or outdoor.	Refer to sample answers.	TWO (2) processes for grading of crops for storage during harvest were described in accordance with crops requirements and local tikanga. ONE (1) storage facility for graded crops during harvest was described in accordance with crops requirements and local tikanga: • indoor • outdoor.	N ☐ A ☐

Overall grade (please circle)	N (Not Achieved)	A (Paetae/Achieved)

Ākonga name		Assessor Name	
Ākonga signature		Assessor signature	

Completion date	

Notes:

FIELD MĀORI ASSESSMENT SUPPORT MATERIAL

TĪKAROHIA TE MARAMA
REALISE YOUR POTENTIAL

LEVEL 2

MAHINGA KAI

UNIT STANDARD 25476 (VERSION 5)

Explain crop storage practices in accordance with tikanga and crop requirements

(Level 2, Credits 6)

ASSESSOR BOOKLET

NZQA
Mana Tohu Mātauranga o Aotearoa
New Zealand Qualifications Authority

MQS
Māori Qualifications Services
Te Ohu Tohu Mātauranga Māori

Assessor Information

There is ONE (1) assessment task that the ākonga must correctly complete to gain credits for this standard.

Evidence for Paetae/Achieved

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Referencing

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Māori Television (Producer). (2016). Iwi Anthems, Series 2 Episode 5 [video file]. Retrieved from: http://www.maoritelevision.com/tv/shows/iwi-anthems/S02E005/iwi-anthems-series-2-episode-5.

4 **Magazine/Newspaper article – popular/trade/general interest**

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PREPARATION FOR MODERATION

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For moderation to occur:

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5. URLs, e.g. for student created websites, will need to be submitted as links within a document.

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If you have any issues with preparing materials for moderation OR do not have materials to submit (ie you didn't assess this standard), **speak** to your Principal Nominee (PN) or Moderation Liaison (ML).

LEVEL 2

ASSESSOR INFORMATION – ASSESSMENT TASKS

Name		NSN #	

SELECT THREE CROPS and EXPLAIN the storage of crops in accordance with local tikanga.

Crops may include but is not limited to kānga, rīwai, kamokamo, paukena, taro, kūmara.

Outcome 1 **Explain crop storage practices in accordance with tikanga and crop requirements**

Assessment Task 1

Explain storage practices for THREE crops.
Explanation must include: • TWO (2) local crop storage practices that may include but is not limited to – • methods • requirements • procedures • processes.
TWO (2) local crop storage facilities that may include – • under-ground • indoors • material. Local environmental conditions for crop storage TWO (2) factors involved in the storage of the crops that may include but is not limited to – • temperature • kiore (rats) • moisture.

Example answers

PROCESS

Cure root/tuber and bulb crops stored at a recommended temperature can be stored up to a year.

REQUIREMENTS

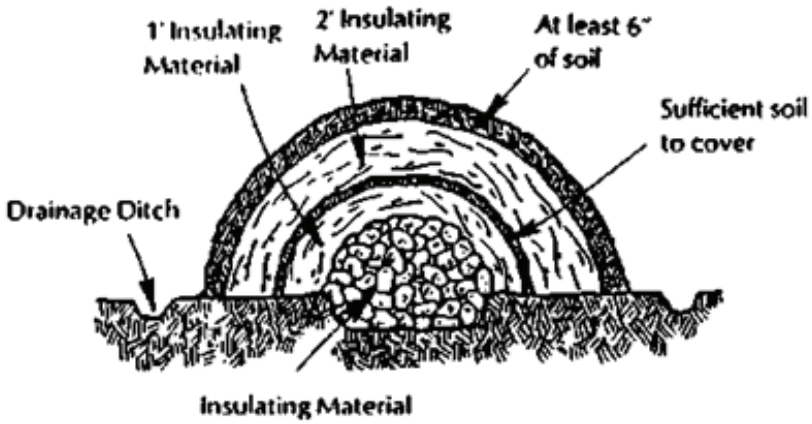
- Provide adequate ventilation in the storage room.
- Avoid lower recommended temperatures.
- Weather conditions
- Temperature
- Moisture

Keep storage rooms clean.

Storage facilities should be protected from rats by keeping outdoor area clean, and free from trash and weeds.

Know the requirements for the crops you want to store and follow recommendations for proper temperature, relative humidity, and ventilation.

UNDER-GROUND STORAGE FACILITY



This is an outdoor storage facility. The materials are dirt packed tight round the crop and greenery is used as insulation material.

LEVEL 2

INDOOR/UNDERGROUND STORAGE FACILITY

http://indulgy.com/post/Y9jiyoGdD1/maori-food-storage

Assessment Schedule

Assessment Task			
Select THREE crops and explain the storage of crops in accordance with local tikanga. Crops may include but is not limited to – kānga, rīwai, kamokamo, paukena, taro, kūmara.		Explain STORAGE of THREE CROPS. Crops may include but is not limited to –kānga, rīwai, kamokamo, paukena, taro, kūmara.	
Describe storage the practices for three crops	**Evidence Statements**		Please tick
Explanation includes TWO local crop storage practices that may include but is not limited to: • methods • requirements • procedures • processes. TWO local crop storage facilities that may include: • under-ground • indoors • materials Local environmental conditions for crop storage. TWO factors involved in the storage of the crops that may include but is not limited to: • temperature • kiore (rats) • moisture.	Refer to sample answers	The storage manual in accordance with crops requirements and local tikanga correctly and appropriately explained: TWO local storage practices that may have included but is not limited to: • methods • requirements • procedures • processes. TWO local crop storage facilities that have included but is not limited to: • under-ground • indoors • materials. TWO environmental conditions for crop storage. TWO factors involved in the storage of the crops that may include but is not limited to: • temperature • kiore (rats) • moisture.	N ☐ A ☐

Overall grade (please circle)	N (Not Achieved)	A (Paetae/Achieved)

Ākonga name		Assessor Name	
Ākonga signature		Assessor signature	

Completion date	

Notes:

Notes:

FIELD MĀORI ASSESSMENT SUPPORT MATERIAL

TĪKAROHIA TE MARAMA
REALISE YOUR POTENTIAL

MAHINGA KAI

LEVEL 3

UNIT STANDARD 25470 (VERSION 6)

Plan, prepare, carry out, and evaluate the propagation of crops in accordance with tikanga

(Level 3, Credits 10)

ASSESSOR BOOKLET

NZQA
Mana Tohu Mātauranga o Aotearoa
New Zealand Qualifications Authority

MQS
Māori Qualifications Services
Te Ohu Tohu Mātauranga Māori

Assessor Information

This unit standard can only be awarded with either Paetae/Achieved or Not Achieved grade.

Evidence for Paetae/Achieved
The following components should be included in the ākonga responses: • TWO objectives for the propagation plan. • Draw a layout of the land and plan the propagation of crops. • Analyse the maramataka and the observations of matariki. • Investigate techniques in terms of planning the propagation of crops. • Evaluate the requirements of the crops and plan for the maintenance of the propagation bed and crops. • Forecast at least TWO deviations to the plan. • Work to prepare the soil for propagation. • Make up the propagation bed using the correct materials. • Prepare TWO tools manual and/or mechanical to carry out the propagation. • Carry out the propagation of crops and the maintenance of the propagation bed and crops. • Write an evaluation report on the propagation of crops.

LEVEL 3

Assesment criteria

The ākonga must develop a PROPAGATION PLAN in accordance with crops requirements and local tikanga to assist whānau, hapū and/or hapori maintain crop resources for their māra kai.

Ākonga booklet

The ākonga receives this booklet. It outlines important information for their assessment.

Ākonga assessment material

All ākonga assessment material and any other evidence must be collected by the assessor and retained for assessment and moderation purposes.

If ākonga choose to provide oral evidence this must be recorded (ie recorded onto a digital device).

Where ākonga work has been selected for moderation the file must be included with the assessment materials.

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To help manage authenticity of ākonga work, where the ākonga is asked to complete any written tasks, the ākonga is asked to use their own words as well as provide reference/s for their information. Please ensure you discuss this with your ākonga.

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Archard, S., Merry, R., & Nicholson, C. (2011). Karakia and waiata [PowerPoint slides]. Retrieved from TEPS757-11B (NET): Communities of Learners website: http://elearn.waikato.ac.nz/mod/resource/view.php?id=174650.

3 **Film**

Māori Television (Producer). (2016). Iwi Anthems, Series 2 Episode 5 [video file]. Retrieved from: http://www.maoritelevision.com/tv/shows/iwi-anthems/S02E005/iwi-anthems-series-2-episode-5.

4 **Magazine/Newspaper article – popular/trade/general interest**

Fox, D. (2015, 15 September). Viewpoint: Not one more acre. *Mana*. Retrieved from: http://www.mana.co.nz/heritage/viewpoint.html.

5 **Personal Communication (letters, telephone conversations, emails, personal interviews, private social networking) – no reference list entry required (not recoverable); however, for quoting or citing in text**

J. Jackson, personal communication, March 12, 2011.

6 **Webpage**

New Zealand Trade and Enterprise. (n.d.). Agribusiness. Retrieved from https://www.nzte.govt.nz/en/export/market-research/agribusiness/.

PREPARATION FOR MODERATION

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1. a copy of the task and any key supporting resources
2. a copy of the assessment schedule
3. up to FOUR (4) samples of student work consisting of the key materials that the assessor has used to make an assessment judgement. (ungraded unit standards: schools – 4 learner samples; providers – 3 learner samples).

For moderation to occur:

4. all files must be viewable online
5. URLs, e.g. for student created websites, will need to be submitted as links within a document.

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If you have any issues with preparing materials for moderation OR do not have materials to submit (ie you didn't assess this standard), **speak** to your Principal Nominee (PN) or Moderation Liaison (ML).

LEVEL 3

ASSESSOR INFORMATION – ASSESSMENT TASKS			
Name		NSN #	

Outcome 1 Plan the propagation of crops in accordance with tikanga and crop requirements

Assessment Task 1

Develop a PROPAGATION PLAN in accordance with crops requirements and tikanga.

PROPAGATION PLAN **Select TWO crops for propagation**		
CROP 1		CROP 2
Plan includes TWO objectives that may include but is not limited to: • production • quality • seed sources • future prospects.		
Plan includes a layout of the land for propagation that may include any TWO from the following list: • environment • adequate light • orientation • aspect • soil variances.		

LEVEL 3

Plan includes the times and seasons for propagation to take place: • use the māramataka, and • the observations of Matariki.	
Plan includes TWO techniques that may include but is not limited to: • mounding • broadcasting • transplanting • manual planting • mechanical planting • contour • aspect	
Plan includes the MAINTENANCE of the propagation bed, that may include TWO of the following: • materials • aeration • temperature • drainage.	
The plan includes a forecast for at least TWO deviations that may include but is not limited to: • weather conditions • equipment shortage or breakdowns • crop diseases.	

*A visual display and/or an oral description may include but is not limited to a PowerPoint or poster presentation. If ākonga choose to provide a visual display and/or an oral description, this must be recorded (i.e. recorded onto a digital device). If ākonga work has been selected for moderation, the file must be included with the materials.

LEVEL 3

Resource Information

PROPAGATION PLAN FOR KŪMARA: THE MĀRA KAI O TE ORANGA.

Crop production:

Propagation from stem cuttings and forming rows of ridges is a more efficient and productive way of producing a large crop, however seed tuber placed in puke will also be used to enhance the growth of the crop.

We have enough quality seed tubers to plant at least 5 rows of 30 mounds. Seed tubers have been stored in temperatures of 10c over winter. We have a good quantity of slip cuttings from the last season.

Propagation site:

Block 4. According to the kaumātua Block 4 is the best place for the propagation because the environment gets the sun all day, the soil variances are good though we may have to add fertilisers.

Seasons and times:

According to the maramataka and the observations of Matariki the best times for propagation is the winter months July- August – Here-turi-koka.

Techniques for propagation of crops:

Transplanting slip cutting in mounds and mounding and planting kūmara tuber seed in each mound ready for next year's crop.

Cover over with Polyethene plastic like tents to protect the plants against weather conditions.

The maintenance of propagation bed:

The Polyethene has the ability te retain and supply sufficient moisture to the seeds, it is porous enough to permit aeration and drain excess moisture. It should be free from weeds seeds and diseases.

Deviations from plan:

Continuous checks on crops through propagation for diseases to salvage at least a large size of the garden. Continuous checks on Polyethene tunnels in all weather conditions.

Outcome 2 **Prepare the propagation bed in accordance with the plan, tikanga and crop requirements**

Assessment Task 2

Prepare propagation bed
This is a practical and group activity; however, you will be assessed individually. Prepare the propagation bed in accordance with the plan, tikanga and crop requirements. Work to prepare the soil for propagation making sure the soil: • is weed free • is friable • moisture content. Make up the bed using the correct materials, to ensure the bed provides: • aeration • temperature and drainage. Prepare manual and/or mechanical tools to carry out the propagation of the crops in accordance with crops requirements and local tikanga.
(The assessor will have a checklist to check off as you work that must be accompanied with photographs or digital). This task assesses the evidence requirements of 2.1, 2.2, 2.3.

Resource Information

PREPARE PROPAGATION BED

http://wahagarden.com/improve-your-garden-and-fall-soil-preparation/

Prepared the soil using forks to turn over and breakdown the dirt, and also be able to maintain moisture content for crops. I am the person nearest the camera.

The soil is ready and the bed is made ready for the propagation of kūmara. I am at the far end of the picture.

LEVEL 3

These are tools for digging up the propagation bed and turning over the soil ready for propagation of crops. The plastic is for covering the crops through the propagation season.

http://www.shutterstock.com/pic-274954091/stock-vector-set-of-various-gardening-items-garden-tools-flat-design-illustration-of-items-for-gardening.html

(The assessor will have a checklist to check off as you work that must be accompanied with photographs or digital).

Outcome 3 **Carry out the propagation of crops in accordance with the plan, tikanga, and crop requirements.**

LEVEL 3

Assessment Task 3

Maintenance of crops

Carry out the propagation of crops and the maintenance of the propagation bed and crops in accordance with:

- the plan
- local tikanga.

The assessor will have a checklist to check off as you work.

This task assesses the evidence requirements of 3.1, 3.2.

Resource Information

The Tubers are then taken and placed in propagating beds and covered with Polyethene.

Plants are cut above the ground when they are around 30cm high and these cuttings are planted to produce the next year's harvest.

Outcome 4 **Evaluate the propagation of crops**

Assessment Task 4

Evaluate the outcome

Write an evaluation report on the propagation of crops. The report must evaluate:

- the techniques applied in the propagation of the crop in relation to the outcome of the crop
- any deviations from the plan in relation to the impacts on the outcome of the crop
- areas for improvements in the propagation of crops to enhance the future outcome of the crop.

In accordance with crop requirements and local tikanga.

This task assesses the evidence requirements of 4.1, 4.2, 4.3.

Resource Examples

EVALUATION REPORT

Whānau, hapū and iwi are faced with worker shortage and higher costs and efficiency is the logical response especially in maintaining hapū marae obligations and responsibilities in the manaakitanga of manuhiri on behalf of the iwi. The whānau hapū has purchased a Bed Former that can be used for propagation and cultivation.

There were no deviations from plan. Contingency plans were put in place for equipment breakdown. The use of Polyethene tents were effective, inexpensive and convenient for the propagation of kūmara.

There are areas of improvement for future outcome of the crops; we didn't use a newer Polyethene film which are resistant to ultraviolet deterioration.

LEVEL 3

MQS Māori Qualifications Services Te Ohu Tohu Mātauranga Māori

Checklist No 1 – Unit standard 25470

Candidate		**Date**	
Assessor		**Location**	

Domain	Whakamahi Whenua
Title	Plan, prepare, carry out, and evaluate the propagation of crops in accordance with tikanga

Unit Standard	25470	**Outcomes / Evidence requirements assessed**	2, 2.1, 2.2, 2.3

LEVEL 3

Task 2 **Prepare the māra for propagation**	**Assessor comments**	**Supporting evidence**	**Yes**	**No**
Modified and developed the soil in the propagation bed • soil is weed free • soil is friable • moisture.				
Made up the propagation bed • materials used met with the requirements of the crop • aeration met the requirements of the crop • soil temperature met the requirements of the crop • drainage met the re/quirements of the crop.				
Prepared the appropriate tools • mechanical • manual.				
Overall comment:				

Note: (for authenticity)

Supporting evidence may include, and can be attached, such as photographs of the ākonga at work, ākonga journals etc.

Assessor Signature		Ākonga Signature	

MQS Māori Qualifications Services Te Ohu Tohu Mātauranga Māori

Checklist No 2 – Unit standard 25470

Candidate		**Date**	
Assessor		**Location**	

Domain	Whakamahi Whenua
Title	Plan, prepare, carry out, and evaluate the propagation of crops in accordance with tikanga

Unit Standard	25470	**Outcomes / Evidence requirements assessed**	Outcome 3; 3.1, 3.2

LEVEL 3

Activity 3 **Maintain the propagation bed**	**Assessor comments**	**Supporting evidence**	**Yes**	**No**
Propagation was carried out in accordance with the plan and local tikanga.				
Carried out the maintenance of the māra and crop in accordance with the plan and local tikanga.				

Overall comment:

Note: (for authenticity)

Supporting evidence may include, and can be attached, such as photographs of the ākonga at work, ākonga journals etc.

Assessor Signature		Ākonga Signature	

MQS Māori Qualifications Services Te Ohu Tohu Mātauranga Māori

Checklist No 3 – Unit standard 25470

Candidate		**Date**	
Assessor		**Location**	

Domain	Whakamahi Whenua
Title	Plan, prepare, carry out, and evaluate the propagation of crops in accordance with tikanga

Unit Standard	25470	**Outcomes / Evidence requirements assessed**	4; 4.1 4.2 4.3

LEVEL 3

Activity 3 **Maintain the propagation bed**	**Assessor comments**	**Supporting evidence**	**Yes**	**No**
Evaluate the • the techniques applied in crops requirements and local tikanga • any deviations from the plan in accordance with crops requirements and local tikanga • Areas for improvement to enhance the future outcome of crops in accordance with crops requirements and local tikanga				

Overall comment:

Note: (for authenticity)

Supporting evidence may include, and can be attached, such as photographs of the ākonga at work, ākonga journals etc.

Assessor Signature		Ākonga Signature	

MQS Māori Qualifications Services Te Ohu Tohu Mātauranga Māori

Assessment Schedule

Task 1	Evidence Statements	Judgement	Please tick
In consultation with your whānau, hapū or hapori: 1 Select at least TWO crops for propagation. 2 Develop a propagation plan in accordance with	The Propagation Plan		N ☐ A ☐
Write at least TWO objectives for the propagation plan. Objectives may include but is not limited to: • soil management • and propagation • resources • future prospects. Draw a layout of the land and plan the site for propagation: • environment • local knowledge • soil variances. Analyse the māramataka and the observations of matariki and plan the times, and seasons propagation takes place. Investigate techniques in terms of planning the propagation of crops. Plan must include at least TWO techniques that includes but is not limited to: • mounding • broadcasting • transplanting • manual planting • mechanical planting • contour • aspect Evaluate the requirements of the crops and plan for the maintenance of the propagation bed and crops. Plan must include at least TWO of the following: • materials • aeration • temperature • drainage.		Two crops were selected for propagation. TWO objectives from the following list were planned for in accordance with crops re-quirements and local tikanga: • soil management • land propagation • resources • future prospects. TWO processes for selecting the propaga-tion site were planned for in accordance with crops requirements and local tikanga. Any TWO from the following list were re-quired: • environment • adequate light • orientation • aspect The season for the propagation of crops were planned for in accordance with the maramataka and the observations of Ma-tariki. TWO techniques from the following list were planned for in accordance with crops requirements and local tikanga: • mounding • broadcasting • transplanting • manual planting • mechanical planting • contour • aspect	N ☐ A ☐

LEVEL 3

Forecast at least TWO deviations to the plan that may include but is not limited to: • weather conditions • equipment shortage or breakdowns • crop diseases.		TWO maintenance processes for the propagation bed from the following list were planned for in accordance with crops requirements and local tikanga: • materials • aeration • temperature • drainage. TWO deviations from the following list were planned for in accordance with crops requirements and local tikanga: • weather conditions • equipment shortage or breakdowns • crop diseases	N ☐ A ☐
Task 2	**Evidence Statements**	**Judgement**	Please tick
This is a practical and group activity how-ever you will be assessed individually. Prepare the māra in accordance with crops requirements and local tikanga. Work to prepare and develop the soil for propagation making sure the soil: • is weed free • is friable • maintain moisture. Make up the māra using the correct materi-als, to ensure the bed provides: • aeration • temperature, and • drainage. Prepare the appropriate tools to carry out the propagation of the crops in accordance with crops requirements and local tikanga. Gather, process and apply data to describe the planting of TWO crops in accordance with local tikanga.	The checklist No. 1	The soil for propagation bed was prepared and developed in accordance with crops requirements and local tikanga providing any TWO of the following: • weed free and/or • friable and/or • maintain moisture. Correct materials were used to make up the propagation bed in accordance with crops requirements and local tikanga providing any one of the following: • aeration • temperature • drainage. TWO tools for the propagation of crops were prepared in accordance with crops requirements and local tikanga.	N ☐ A ☐

LEVEL 3

Task 3	Evidence Statements	Judgement	Please tick
This is a practical and group activity however you will be assessed individually. Carry out the propagation of crops and the maintenance of the propagation bed and crops in accordance with: • the plan • local tikanga.	The checklist No. 2	The propagation of crops and the maintenance of the propagation bed was appropriately carried out in accordance with: • the plan • local tikanga.	N ☐ A ☐
Task 4	**Evidence Statements**	**Judgement**	Please tick
Write an evaluation report on the propagation of crops. The report must evaluate: • the techniques applied in the propagation of the crop in relation to the outcome of the crop • any deviations from the plan in relation to the impacts on the outcome of, the crop • areas for improvements in the propagation of crops to enhance the future outcome of the crop	The checklist No. 3	The evaluation report included in accordance with local tikanga: • the techniques applied in the propagation of the crop in relation to the outcome of the crop • any deviations from the plan in relation to the impacts on the outcome of, the crop • areas for improvements in the propagation of crops to enhance the future outcome of the crop.	N ☐ A ☐

Overall grade (please circle)	N (Not Achieved)	A (Paetae/Achieved)

Ākonga name		Assessor Name	
Ākonga signature		Assessor signature	

Completion date	

LEVEL 3

Notes:

Notes:

FIELD MĀORI ASSESSMENT SUPPORT MATERIAL

TĪKAROHIA TE MARAMA
REALISE YOUR POTENTIAL

MAHINGA KAI

LEVEL 3

UNIT STANDARD 25473 (VERSION 6)

Plan, prepare, carry out, and evaluate the cultivation of crops in accordance with tikanga

(Level 3, Credits 10)

ASSESSOR BOOKLET

NZQA
Mana Tohu Mātauranga o Aotearoa
New Zealand Qualifications Authority

MQS
Māori Qualifications Services
Te Ohu Tohu Mātauranga Māori

Assessor Information

There are FOUR (4) assessment tasks that the ākonga must correctly complete to gain credits for this standard

Evidence for Paetae/Achieved

All assessment evidence is practical and where possible, should be collected by the assessor and retained for assessment and moderation purposes (such as portfolio, answer sheets, audio or digital evidence).

You will need to discuss with the ākonga the length of time they must complete the assessment. There are many ways ākonga may present their evidence. They may use:

- PowerPoint and talk to their presentation
- Illustrations using images and identifying designs etc,
- Write descriptive essays, maintain a visual diary etc.

Ākonga booklet

The ākonga receives this. It outlines important information for the ākonga including:

- assessment and other information
- assessment tasks.

Ākonga assessment tasks

These sheets and any other evidence should be collected by the Assessor and retained for assessment and moderation purposes.

Where ākonga choose to provide oral description/evidence for Task 3, this must be recorded (i.e. recorded onto a digital device) or verified by a credible verifier, ie. a person with knowledge skills, experience and mana. Where ākonga work has been selected for moderation, the file and/or attestation form must be included with the materials.

Where a recording of the demonstration is submitted for moderation, the ākonga identification sheet (refer following link: http://www.nzqa.govt.nz/assets/Providers-and-partners/Assessment-and-moderation/mod-visevidence-cvr.doc) must be included.

You will need to discuss with the ākonga the length of time they must complete the assessment. He ture-a-kōnui: one credit equates to 10 notional hours of teaching, practice and/or study, and assessment.

Authenticity

As per NZQA requirements, the assessor must:w

verify that the work submitted for assessment has been produced by the ākonga

consider (and manage) the potential for work to have been copied, borrowed from another ākonga, photocopied from a book or downloaded from the internet.

Ākonga may work with and learn from others to gather information from a variety of sources. However, you must be clear that the work to be assessed has been processed and produced by the ākonga.

To help manage authenticity of ākonga work, where the ākonga is asked to complete any written tasks, the ākonga is asked to use their own words as well as provide reference/s for their information. Please ensure you discuss this with your ākonga.

For further information, please refer to the following link:

https://www.nzqa.govt.nz/providers-partners/assessment-and-moderation-of-standards/assessment-of-standards/generic-resources/authenticity/

Referencing

This assessment requires the ākonga to reference his/her information. For the purposes of this assessment, the

following are examples of reference styles.

EXAMPLES OF REFERENCING STYLES

1 **Book**

King, M. (2000). *Wrestling with the angel: A life of Janet Frame*. Auckland, New Zealand: Viking.

2 **Course handout/Lecture notes (electronic version)**

Archard, S., Merry, R., & Nicholson, C. (2011). Karakia and waiata [PowerPoint slides]. Retrieved from TEPS757-11B (NET): Communities of Learners website: http://elearn.waikato.ac.nz/mod/resource/view.php?id=174650.

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Quick Tip

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LEVEL 3

ASSESSOR INFORMATION – ASSESSMENT TASKS

Name		NSN #	

Outcome 1 **Plan the cultivation of crops in accordance with tikanga and crop requirements.**

Assessment Task 1

Maintenance of crops

1 Select at least TWO crops for cultivation

2 Develop a cultivation plan in accordance with crops requirements and local tikanga

Write at least TWO objectives for the cultivation plan.

Objectives may include but is not limited to:

- soil management
- land cultivation
- crop production
- resources
- future prospects.

Draw a layout of the land and plan the site for cultivation.

- environment
- local knowledge
- soil variances.

Analyse the maramataka and the observations of Matariki and plan the times, and seasons cultivation takes place.

Investigate techniques in terms of planning the cultivation of crops.

Plan must include at least TWO techniques that includes but is not limited to –

- mounding
- broadcasting
- transplanting
- manual planting
- mechanical planting
- contour
- aspect.

Evaluate the requirements of the crops and plan for the maintenance of the propagation bed and crops.

Plan must include at least TWO of the following:

- materials
- aeration
- temperature
- drainage.

Forecast at least TWO deviations to the plan that may include but is not limited to –

- weather conditions
- equipment shortage or breakdowns
- crop diseases.

Present your plan to the whānau, hapū or hapori for their approval.

*A visual display and/or an oral description may include but is not limited to a PowerPoint or poster presentation. If ākonga choose to provide a visual display and/or an oral description, this must be recorded (i.e. recorded onto a digital device). If ākonga work has been selected for moderation, the file must be included with the materials.

This task assesses the evidence requirements of 1.1, 1.2, 1.3, 1.4, 1.5, 1.6.

1.1 Objectives for the cultivation of the crop are planned for in accordance with local tikanga.

Range includes but is not limited to – soil management, land cultivation, crop production, resources, future prospects; evidence of two is required.

1.2 Selection of the site for cultivation is planned for in accordance with local tikanga.

Range environment, local knowledge, soil variances; evidence of two is required

1.3 Seasons and times for cultivation are planned for in accordance with crop requirements and local tikanga.

Range maramataka, observations of Matariki.

1.4 Techniques for the cultivation of crops are planned for in accordance with crop requirements and local tikanga.

Range may include – mounding, broadcasting, transplanting, manual planting, mechanical planting, contour, aspect.

1.5 The maintenance of the cultivation bed is planned for in accordance with crop requirements and local tikanga.

Range material, aeration, temperature, and drainage; evidence of two is required.

1.6 Deviations from the plan are planned for in accordance with crop requirements and local tikanga.

Range may include but is not limited to – weather conditions, equipment shortage/breakdown, crop diseases; evidence of two is required.

Outcome 2 **Prepare the cultivation bed in accordance with the plan, tikanga and crop requirements.**

Assessment Task 2

Prepare māra kai.

Prepare māra kai.

This is a practical and group activity; however, you will be assessed individually.

Prepare the māra in accordance with crops requirements and local tikanga.

Work to prepare and develop the soil for cultivation making sure the soil that may include at least TWO from the following list:

- is weed free
- is friable
- maintain moisture.

Make up the māra using the correct materials, to ensure the bed provides at least TWO from the following list:

- aeration
- temperature, and
- drainage.

Prepare the appropriate tools to carry out the cultivation of the crops in accordance with crops requirements and local tikanga.

(The assessor will have a checklist to check off as you work that must be accompanied with photographs or digital).

This task assesses the evidence requirements of 2.1, 2.2, 2.3

2.1 The soil is prepared for cultivation in accordance with crop requirements and local tikanga.

Range includes but is not limited to – weed free, friable, moisture content:

evidence of two is required.

2.2 The cultivation bed is prepared in accordance with the crop requirements and local tikanga.

Range materials, aeration, temperature, and drainage;

evidence of two is required.

2.3 Tools required for cultivation are prepared in accordance with the crop requirements and local tikanga.

LEVEL 3

Outcome 3	Carry out the cultivation of the crops in accordance with the plan, tikanga, and crop requirements.

Assessment Task 3

Maintenance of crops

Carry out the cultivation of crops and the maintenance of the cultivation bed and crops in accordance with:

- the plan
- crops requirements
- local tikanga.

This task assesses the evidence requirements of 3.1, 3.2,

3.1 Cultivation is carried out in accordance with plan and in accordance with local tikanga practices.

3.2 Maintenance of the māra and crops are carried out in accordance with the plan and in accordance with local tikanga.

Outcome 4	Evaluate the cultivation of the crops

Assessment Task 4

Evaluate the outcome

Write an evaluation report on the cultivation of crops. The report must evaluate:

- the techniques applied in the cultivation of the crop in relation to the outcome of the crop
- any deviations from the plan in relation to the impacts on the outcome of, the crop
- areas for improvements in the cultivation of crops to enhance the future outcome of the crop.

In accordance with crop requirements and local tikanga

This task assesses the evidence requirements of 3.1, 3.2,

3.1 Cultivation is carried out in accordance with plan and in accordance with local tikanga practices.

3.2 Maintenance of the māra and crops are carried out in accordance with the plan and in accordance with local tikanga.

This task assesses the evidence requirements of 4.1, 4.2, 4.3.

4.1 The techniques applied in the cultivation of the crop are evaluated in terms of the outcome of the crop and in accordance with local tikanga.

4.2 Any deviations from the plan are evaluated in terms of the effects of the crops, the outcomes of the crop, and in accordance with local tikanga.

4.3 Areas for improvement in the cultivation of crops are evaluated in terms of enhancing the future outcome of the crop and in accordance with local tikanga.

Resource Information

Crop production	Rīwai and kūmara
Future prospects	For hapū consumption and to meet the manaakitanga responsibilities of the marae.
	Tuber seeds for rīwai and both tuber seeds and slip cuttings. Kānga seeds.
Resources	Mechanical equipment – Check hapū tractor and ploughs and harrow.
Select site:	Manual equipment hoes – whānau.
Environment	
Local knowledge	
Seasons and times:	
Maramataka	Mahuru – August to September the earth has acquired warmth, as have vegetation and tree. Prepare the gardens for planting.
	Whiringa-a-nuku – September to October the earth is now warm.
Observations of Matariki	Plant the seeds when the last frosts clear just before the spring.
Techniques for planting of crops:	
Manual planting	Broadcast sowing - Kānga
	Transplanting – kūmara slip cuttings from propagation bed.
The maintenance of cultivation bed:	Whiringa-ā- Nuku and Whiringa ā Rangi, the hapū will maintain the gardens to ensure temperature, aeration and drainage is suitable for the growth of crops.
Temperature	
Aeration	
Drainage	
Deviations from plan:	The hapū have 2 whānau that will lend the use of their tractors. Hapū cover the cost of petrol etc.
Equipment shortage/ breakdown	Continual check on crops through cultivation for diseases to salvage at least a large size of the garden.
Crop disease	
Weather conditions	

LEVEL 3

Season and Planting	
 http://topveg.com/2009/12/how-to-prepare-soil-for-potato-planting/	Whānau members have prepared the soil for the kamokamo ensuring it is weed free, friable and moist enough for the plants to gather sufficient water from the soil to form starchy tubers. https://en.wikipedia.org/wiki/Potato Preparing the māra making it ready to plant rīwai. Native and organic fertilisers have been added to ensure that the bed provides aeration, maintain right temperature and good drainage so that the whānau will have enough potatoes for the marae and whānau.
 https://akoaotearoa.ac.nz/ako-hub/good-practice-publication-grants-e-book/resources/pages/enhancing-learning-and-confidence	Preparing the māra making it ready to plant rīwai. Native and organic fertilisers have been added to ensure that the bed provides aeration, maintain right temperature and good drainage so that the whānau will have enough potatoes for the marae and whānau.
	Preparing tools for planting rīwai Mechanical tools: Tractor, plough and harrow – making sure they are in working order. Manual hand Tools: Whānau bring own These three examples are only for the cultivation of rīwai.

These three examples are only for the cultivation of rīwai.

	Whānau members covering the rīwai after the sowers.
	Whānau mounding rīwai.
	Rīwai need watering often.

Attach photographs to checklist. Take and use own photographs from the beginning of cultivation of to the harvest please identify yourself by clothing, the task and attach to checklist

Evaluation Report

The use of the tractor to plant the māra rīwai was excellent and made it easy on the hapū as not all the hapū were available at planting time. There was enough whānau from the hapū to plant the kamokamo and kānga manually.

There were no deviations from the plan, and contingency plans were put in place for equipment breakdown and weather conditions were favourable to the crops.

Areas of improvement in the cultivation of crops for future outcome of the crop are minimal. The crops were planted in the ground on time.

Checklist No 1

Candidate		**Date**	
Assessor		**Location**	

Domain	Whakamahi Whenua
Title	Plan, prepare, carry out, and evaluate the cultivation of crops in accordance with tikanga

Unit Standard	25473	**Outcomes / Evidence requirements assessed**	2, 2.1, 2.2, 2.3

Activity 2 **Prepare the māra for cultivation**	**Assessor comments**	**Supporting evidence**	**Yes**	**No**
Modified and developed the soil in the cultivation bed: • soil is weed free • soil is friable • moisture.				
Made up the cultivation bed: • materials used met with the requirements of the crop • aeration met the requirements of the crop • soil temperature met the requirements of the crop • drainage met the requirements of the crop.				
Prepared the appropriate tools: • mechanical • manual.				

LEVEL 3

Overall comment:			
Note: (for authenticity) Supporting evidence may include, and can be attached, such as photographs of the ākonga at work, ākonga journals etc.			
Assessor Signature		Ākonga Signature	

Checklist No 2

Candidate		**Date**	
Assessor		**Location**	

Domain	Whakamahi Whenua
Title	Plan, prepare, carry out, and evaluate the cultivation of crops in accordance with tikanga

Unit Standard	25473	**Outcomes / Evidence requirements assessed**	Outcome 3; 3.1, 3.2

Activity 3 **Maintain the cultivation bed**	**Assessor comments**	**Supporting evidence**	**Yes**	**No**
Cultivation was carried out in accordance with the plan and local tikanga.				
Carried out the maintenance of the māra and crop in accordance with the plan and local tikanga.				
Overall comment:				
Note: (for authenticity) Supporting evidence may include, and can be attached, such as photographs of the ākonga at work, ākonga journals etc.				

Assessor Signature		Ākonga Signature	

LEVEL 3

Checklist No 3

Candidate		**Date**	
Assessor		**Location**	

Domain	Whakamahi Whenua
Title	Plan, prepare, carry out, and evaluate the cultivation of crops in accordance with tikanga

Unit Standard	25473	**Outcomes / Evidence requirements assessed**	4, 4.1, 4.2, 4.3

Activity 4 **Evaluate the cultivation of crops**	**Assessor comments**	**Supporting evidence**	**Yes**	**No**
Evaluate: • the techniques applied in crops requirements and local tikanga • any deviations from the plan in accordance with crops requirements and local tikanga • Areas for improvement to enhance the future outcome of crops in accordance with crops requirements and local tikanga				

Overall comment:

Note: (for authenticity)

Supporting evidence may include, and can be attached, such as photographs of the ākonga at work, ākonga journals etc.

Assessor Signature		Ākonga Signature	

LEVEL 3

Assessment Schedule

Assessment Task 1

1 Select at least TWO crops for cultivation. 2 Develop a cultivation plan in accordance with crops requirements and local tikanga. Write at least TWO objectives for the cultivation plan. Objectives may include but is not limited to: • soil management • land cultivation • crop production • resources • future prospects.		TWO CROPS for cultivation were selected. The cultivation plan was developed in accordance with crops requirements and local tikanga. The plan in accordance with crops requirements and local tikanga included: TWO objectives from the following list: • soil management • land cultivation • resources • future prospects.	N ☐ A ☐
Draw a layout of the land and plan the site for cultivation: • environment • local knowledge • soil variances. Analyse the maramataka and the observations of Matariki and plan the times, and seasons cultivation takes place. Investigate techniques in terms of planning the cultivation of crops. Plan must include at least TWO techniques that includes but is not limited to – • mounding • broadcasting • transplanting • manual planting • mechanical planting • contour • aspect.		TWO criteria for the selection of site from the following list: • environment • local knowledge • soil variances. Season that included: • Maramataka • observations of Matariki. TWO cultivation techniques from the following list: • mounding • broadcasting • transplanting • manual planting • mechanical planting • contour • aspect.	N ☐ A ☐

LEVEL 3

Assessment Task 1			
Evaluate the requirements of the crops and plan for the maintenance of the cultivation bed and crops. Plan must include at least TWO of the following: • materials • aeration • temperature • drainage. Forecast at least TWO deviations to the plan that may include but is not limited to – • weather conditions • equipment shortage or breakdowns • crop diseases.		TWO of the following for the maintenance of the cultivation bed and crops. • materials • aeration • temperature • drainage. TWO deviations from the following list; • weather conditions • equipment shortage or breakdowns • crop disease.	Please tick N ☐ A ☐
Assessment Task 2			
This is a practical and group activity; however, you will be assessed individually. Prepare the māra in accordance with crops requirements and local tikanga. Work to prepare and develop the soil for cultivation making sure the soil meets any TWO of the following: • weed free • friable • maintain moisture. Make up the māra using the correct materials, to ensure the bed provides any TWO of the following: • aeration • temperature • drainage. Prepare the appropriate tools to carry out the cultivation of the crops in accordance with crops requirements and local tikanga	The checklist No. 1	The māra was prepared in accordance with crops requirements and local tikanga. The soil was appropriately prepared and developed to meet TWO of the following requirements: • weed free • friable • maintain moisture. The make-up of the māra kai provided TWO of the following: • aeration • temperature • drainage. The appropriate tools necessary to carry out the cultivation were prepared in accordance with crops requirements and local tikanga.	Please tick N ☐ A ☐

LEVEL 3

Assessment Task 3			
This is a practical and group activity however you will be assessed individually. Carry out the cultivation of crops and the maintenance of the cultivation bed and crops in accordance with: • the plan • crops requirements • local tikanga.	The checklist No. 2	The cultivation and maintenance of crops were carried out in accordance with: • the plan • crops requirements • local tikanga.	Please tick N ☐ A ☐

Assessment Task 4			
Write an evaluation report on the cultivation of crops in accordance with local tikanga: • the techniques applied in the cultivation of the crop in relation to the outcome of the crop • any deviations from the plan in relation to the impacts on the outcome of the crop • areas for improvements in the cultivation of crops to enhance the future outcome of the crop.	The checklist No. 3	The evaluation report for the cultivation of crops included was in accordance with local tikanga and included the following: • the techniques applied in the cultivation in relation to the outcome of the crop • any deviations from the plan in relation to the effects on the outcomes of the crops and in accordance with the crop • areas for improvements in the cultivation of crops to enhance the future outcome of the crop.	Please tick N ☐ A ☐

LEVEL 3

Overall grade (please circle)	N (Not Achieved)	A (Paetae/Achieved)

Ākonga name		Assessor Name	
Ākonga signature		Assessor signature	

Completion date	

Notes:

Notes:

FIELD MĀORI ASSESSMENT SUPPORT MATERIAL

TĪKAROHIA TE MARAMA
REALISE YOUR POTENTIAL

MAHINGA KAI

LEVEL 3

UNIT STANDARD 25475 (VERSION 6)

Plan, prepare, carry out, and evaluate the harvesting of crops in accordance with tikanga

(Level 3, Credits 10)

ASSESSOR BOOKLET

NZQA
Mana Tohu Mātauranga o Aotearoa
New Zealand Qualifications Authority

MQS
Māori Qualifications Services
Te Ohu Tohu Mātauranga Māori

Assessor Information

This is an assessment booklet for Whakamahi Whenua unit standard 25475: Plan, prepare, carry out, and evaluate the harvesting of crops in accordance with tikanga.

Evidence for Paetae/Achieved

There are FOUR (4) assessment tasks that the ākonga must correctly complete to gain credits for this unit standard. Once the ākonga has correctly completed all the tasks, the assessor must complete the assessment schedule for each ākonga.

For this unit standard, it is encouraged that ākonga work in groups of no more than four.

Activities for tasks:

- Work sessions, and discussions.
- Practical and paper.
- Computer practical.

LEVEL 3

Ākonga booklet

The ākonga receives this. It outlines important information for the ākonga including:

- assessment and other information
- assessment tasks.

Ākonga assessment tasks

These sheets and any other evidence should be collected by the Assessor and retained for assessment and moderation purposes.

Where ākonga choose to provide oral description/evidence for Task 3, this must be recorded (i.e. recorded onto a digital device) or verified by a credible verifier, ie. a person with knowledge skills, experience, and mana. Where ākonga work has been selected for moderation, the file and/or attestation form must be included with the materials.

Where a recording of the demonstration is submitted for moderation, the ākonga identification sheet (refer following link: http://www.nzqa.govt.nz/assets/Providers-and-partners/Assessment-and-moderation/mod-visevidence-cvr.doc) must be included.

You will need to discuss with the ākonga the length of time they have to complete the assessment. He ture-a-kōnui: one credit equates to 10 notional hours of teaching, practice and/or study, and assessment.

Authenticity

As per NZQA requirements, the assessor must:w

verify that the work submitted for assessment has been produced by the ākonga

consider (and manage) the potential for work to have been copied, borrowed from another ākonga, photocopied from a book or downloaded from the internet.

Ākonga may work with and learn from others to gather information from a variety of sources. However, you must be clear that the work to be assessed has been processed and produced by the ākonga.

To help manage authenticity of ākonga work, where the ākonga is asked to complete any written tasks, the ākonga is asked to use their own words as well as provide reference/s for their information. Please ensure you discuss this with your ākonga.

For further information, please refer to the following link:

http://www.nzqa.govt.nz/providers-partners/assessment-and-moderation/assessment-of-standards/generic-resources/authenticity/

Referencing

This assessment requires the ākonga to reference his/her information. For the purposes of this assessment, the following are examples of reference styles.

EXAMPLES OF REFERENCING STYLES

1 **Book**

King, M. (2000). *Wrestling with the angel: A life of Janet Frame*. Auckland, New Zealand: Viking.

2 **Course handout/Lecture notes (electronic version)**

Archard, S., Merry, R., & Nicholson, C. (2011). Karakia and waiata [PowerPoint slides]. Retrieved from TEPS757-11B (NET): Communities of Learners website: http://elearn.waikato.ac.nz/mod/resource/view.php?id=174650.

3 **Film**

Māori Television (Producer). (2016). Iwi Anthems, Series 2 Episode 5 [video file]. Retrieved from: http://www.maoritelevision.com/tv/shows/iwi-anthems/S02E005/iwi-anthems-series-2-episode-5.

4 **Magazine/Newspaper article – popular/trade/general interest**

Fox, D. (2015, 15 September). Viewpoint: Not one more acre. *Mana*. Retrieved from: http://www.mana.co.nz/heritage/viewpoint.html.

5 **Personal Communication (letters, telephone conversations, emails, personal interviews, private social networking) – no reference list entry required (not recoverable); however, for quoting or citing in text**

J. Jackson, personal communication, March 12, 2011.

6 **Webpage**

New Zealand Trade and Enterprise. (n.d.). Agribusiness. Retrieved from https://www.nzte.govt.nz/en/export/market-research/agribusiness/.

PREPARATION FOR MODERATION

It is no longer necessary to complete a Moderation Cover Sheet as this information is entered online. If physical materials are sent for moderation, please ensure name of school and standard are included.

Digital submissions can be made directly through the application at any time.

Using the online External Moderation Application, schools and providers must include:

1. a copy of the task and any key supporting resources
2. a copy of the assessment schedule
3. up to FOUR (4) samples of student work consisting of the key materials that the assessor has used to make an assessment judgement. (ungraded unit standards: schools – 4 learner samples; providers – 3 learner samples).

For moderation to occur:

4. all files must be viewable online
5. URLs, e.g. for student created websites, will need to be submitted as links within a document.

For more information on the digital moderation process, please contact your Principal Nominee or Moderation Liaison (ML).

If you have any issues with preparing materials for moderation OR do not have materials to submit (ie you didn't assess this standard), **speak** to your Principal Nominee (PN) or Moderation Liaison (ML).

LEVEL 3

MQS Māori Qualifications Services Te Ohu Tohu Mātauranga Māori

ASSESSOR INFORMATION – ASSESSMENT TASKS

Name		NSN #	

Outcome 1 **Plan the harvesting of crops in accordance with tikanga and crop requirements.**

Assessment Task 1

Harvest Plan

In consultation with your whānau, hapū or hapori select TWO crops for harvesting.

Develop a plan to harvest crops.

Write at least TWO objectives for the plan that may include but is not limited to:

- quantity
- quality
- grading
- future prospects for the crop.

Analyse the maramataka and observations of Matariki and plan the optimum times for harvesting of crops.

Investigate methods for the harvesting of crops in accordance with crops requirements and local tikanga.

Forecast at least TWO deviations to the plan in accordance with the crops requirements and local tikanga.

Deviations may include but is not limited to:

- weather conditions
- equipment shortage or breakdowns
- crop diseases.

Present your plan to the whānau, hapū or hapori for their approval.

*A visual display and/or an oral description may include but is not limited to a PowerPoint or poster presentation. If ākonga choose to provide a visual display and/or an oral description, this must be recorded (i.e. recorded onto on a digital device). If ākonga work has been selected for moderation, the file must be included with the materials.

This task assesses the evidence requirements of:

1.1 Objectives for the harvesting of the crop are planned for in accordance with local tikanga.

Range includes but is not limited to – quantity, quality, grading, future-prospects;

evidence of two is required.

1.2 Optimum times for harvesting crops are planned for in accordance with local tikanga.

Range māramataka, observations of Matariki.

1.3 Methods for harvesting crops are planned for in accordance with crop requirements and local tikanga.

1.4 Deviations from the plan are planned for in accordance with crop requirements and local tikanga.

Range may include but is not limited to – weather conditions, equipment shortage/breakdown, crop diseases; evidence of two is required.

LEVEL 3

Outcome 2	Prepare the harvesting of crops in accordance with the plan, tikanga and crop requirements.

Assessment Task 2

Prepare to harvest crops.

This is a practical and group activity; however, you will be assessed individually.

Prepare the tools for harvesting in accordance with the crops requirements and local tikanga.

Prepare storage in accordance with the storage plan and local tikanga.

This task assesses the evidence requirements of 2.1, 2.2

2.1 Tools are prepared in accordance with crop requirements and local tikanga.

2.2 Storage is prepared in accordance with the crop requirements and local tikanga.

Outcome 3	Carry out the harvesting of the crops in accordance with the plan, tikanga and crop requirements.

Assessment Task 3

Carry out the harvest of crops.

This is a practical and group activity; however, you will be assessed individually.

Harvest the crops in accordance with:

- the plan
- crops requirements
- local tikanga.

This task assesses the evidence requirements of unit standard.

3.1 The crop is harvested in accordance with crop requirements, the plan and local tikanga.

Outcome 4	Evaluate the harvesting of the crops.

Assessment Task 3

Evaluate the harvest of crops

Write an evaluation report on the harvesting of crop in accordance with local tikanga.

The report must evaluate:

- the methods applied in the storage of the crop in relation to the outcome of the crop
- any deviations and variations from the plan in terms of the effects on the outcome of, the crop during storage
- areas for improvements in the propagation in terms of enhancing the future outcome of the crop.

In accordance with crop requirements and local tikanga

Evaluate the harvest of crops

This task assesses the evidence requirements of:

4.1 The techniques applied in the storage of the crop are evaluated in terms of the outcome of the crop and in accordance with local tikanga.

4.2 Any deviations from the plan are evaluated in terms of the effects on the outcomes of the crop during storage, and in accordance with local tikanga.

4.3 Areas for improvement in propagation are evaluated in terms of enhancing the future outcome of the crop and in accordance with local tikanga.

Checklist No 1

Candidate		**Date**	
Assessor		**Location**	

Domain	Whakamahi Whenua
Title	Plan, prepare, carry out, and evaluate the harvesting of crops in accordance with tikanga

Unit Standard	25475	**Outcomes / Evidence requirements assessed**	3, 3.1, 3.2

Task 2 **Harvest crops (2)**	**Assessor comments**	**Supporting evidence**	**Yes**	**No**
Carried out the harvest of crops in accordance with: • the plan • crop requirements • local tikanga.				
Overall comment:				
Note: (for authenticity) Supporting evidence may include, and can be attached, such as photographs of the ākonga at work, ākonga journals etc.				

Assessor Signature		Ākonga Signature	

LEVEL 3

Checklist No 2

Candidate		**Date**	
Assessor		**Location**	

Domain	Whakamahi Whenua
Title	Plan, prepare, carry out, and evaluate the harvesting of crops in accordance with tikanga

Unit Standard	25475	**Outcomes / Evidence requirements assessed**	3; 3.1

Task 3 **Carry out the harvest of crops**	**Assessor comments**	**Supporting evidence**	**Yes**	**No**
The harvest was carried out in accordance with the plan and local tikanga.				
Prepared and distributed kai according to local tikanga.				

Overall comment:

Note: (for authenticity)

Supporting evidence may include, and can be attached, such as photographs of the ākonga at work, ākonga journals etc.

Assessor Signature		Ākonga Signature	

LEVEL 3

Checklist No 3

Candidate		**Date**	
Assessor		**Location**	

Domain	Whakamahi Whenua
Title	Plan, prepare, carry out, and evaluate the harvesting of crops in accordance with tikanga

Unit Standard	25475	**Outcomes / Evidence requirements assessed**	4, 4.1, 4.2, 4.3

Activity 4 **Evaluate the harvesting of crops**	**Assessor comments**	**Supporting evidence**	**Yes**	**No**
Evaluate: • the methods applied in the storage of crops in terms of the outcomes of the crop and in accordance with • local tikanga • any deviations from the plan in terms of the effects on the outcome of crop during storage and in accordance with local tikanga • areas for improvement in propagation in terms of enhancing the future outcome of the crop and in accordance with local tikanga.				

Overall comment:

Note: (for authenticity)

Supporting evidence may include, and can be attached, such as photographs of the ākonga at work, ākonga journals etc.

Assessor Signature		Ākonga Signature	

LEVEL 3

Resource Information

THE PLAN TO HARVEST CROPS – RĪWAI AND KAMOKAMO

Objectives Quantity Grading Future prospects	To feed the whānau through the winter months and to have seeds for next year's hapū garden. To make sure our hapū marae can carry on keep up with manaakitanga responsibilities and obligations on behalf of the iwi. Kai mā te whānau. Kai mā te manuhiri. Kai mā ngā pōaka. To produce more seeds for a bigger and better quality of crops for the next year.
Seasons and times: Māramataka Observations of Matariki	Poutū-te-Rangi Harvesting, gathering, hunting and fishing will commence in Poutū-te-Rangi to fill our hapū pātaka kai for the winter months.
Methods for harvesting of crops: Digging up crops Gathering of rīwai Sorting and grading	Manual equipment – whānau supply equipment for harvesting. Forks and spades. Mechanical equipment – the harvester. The whānau use kete, buckets etc to gather the rīwai and take to sorters for grading. The kaumātua can show and tell and supervise the sorting and grading of rīwai.
Deviations from plan: Equipment shortage/breakdown Weather conditions	 Tractor and harvester and whānau harvest manually. Call on hapū, iwi to support the harvest.

Note: Your ākonga have been asked to provide references. Where you have referred to a book, or website, or person, please acknowledge this in your lessons.

This is a papa and his tamaiti. He is digging up the rīwai, his tamaiti is gathering them up in his kete to take to be sorted and graded.	
This is a group of tamariki from a kura they are sorting and preparing the rīwai ready for storage and distribution.	

The rīwai are distributed between whānau for consumption and the bulk is stored for the marae.

The crops are distributed to whānau for whānau consumption and the rest are stored for the marae.

THE EVALUATION REPORT

Tēnā koutou e te whānau. WE had a very good harvest this year.

The harvest brought more crop this year so the hapū had to build extra storage boxes. There were no effects on the storage of crops.

The storage unit was well prepared. Building boxes off the floor protects the crops from rats and other small animals, and they were also well placed where the crops are not exposed to too much light or the sun.

The whānau have been talking about expanding the garden to the bottom field to plant more kai for marketing at the Rotorua market on Saturday to bring in some revenue to maintain the up-keep of the marae. So, we will have to look at propagation methods for many crops as well as rīwai, kānga, and paukena.

There were no impacts on the whenua or the environment however for next year we will include sustainable management practices in the planning, selection, and preparation of crops to plant on the site.

Ngā mihi to the whānau and hapū who worked hard together to complete the harvest on time.

MQS Māori Qualifications Services Te Ohu Tohu Mātauranga Māori

Assessment Schedule

Assessment Task 1			
In consultation with your whānau, hapū or hapori develop a plan to harvest a crop. Write the objectives for the plan that may include but is not limited to: • quantity • quality • grading • future prospects for the crop.	Refer to sample answers.	Two objectives in the plan were appropriate and in accordance with the requirements of the crops and local tikanga.	Please tick: N ☐ A ☐
Analyse the maramataka and observations of Matariki and plan the optimum times for harvesting of crops.	Refer to sample answers.	The optimum times in the plan appropriately made reference to the maramataka and the observations of Matariki in accordance with the requirements of crop and local tikanga.	N ☐ A ☐
Investigate the methods for the harvesting in accordance with the crops requirements and local tikanga.	Refer to sample answers.	The methods of harvesting the crops in the plan were appropriate and in accordance with the requirements of crop and local tikanga.	N ☐ A ☐
Forecast at least TWO deviations to the plan in accordance with the crops requirements and local tikanga. Deviations may include but is not limited to: • weather conditions • equipment shortage or breakdowns • crop diseases.	Refer to sample answers.	The plan included at least two deviations that may include any two of the following: • weather conditions • equipment shortage or breakdowns • crop diseases.	N ☐ A ☐
Assessment Task 2			
This is a practical and group activity; however, you will be assessed individually. Prepare the tools for harvesting in accordance with the crops requirements and local tikanga. Prepare storage in accordance with the storage plan and local tikanga.	Checklist No. 1.	Tools to harvest a crop were appropriately prepared and in accordance with local tikanga. Storage for harvested crop was appropriately prepared: • in accordance with local tikanga, and • crop requirements.	N ☐ A ☐

LEVEL 3

Assessment Task 3			
This is a practical and group activity however you will be assessed individually. Harvest crops in accordance with: • the plan • crop requirements • local tikanga.	Checklist No. 2	The harvest was carried out in accordance with: • the plan • crop requirements • local tikanga • individual participation and contribution were recorded.	N ☐ A ☐
Assessment Task 4			
• Present an evaluation report on: • the methods applied in the storage of the crop in relation to the outcome of the crop • any deviations and variations from the plan in terms of the effects on the outcome of, the crop during storage • areas for improvements in the propagation in terms of enhancing the future outcome of the crop.	Checklist No 3.	The evaluation report included the: • methods applied in the storage of the crop • any deviations from plan and effects on the outcome of the crop during storage • areas of improvement in propagation in terms of enhancing future outcome of the crop.	N ☐ A ☐

Overall grade (please circle)	N (Not Achieved)	A (Paetae/Achieved)

Ākonga name		Assessor Name	
Ākonga signature		Assessor signature	

Completion date	

LEVEL 3

Notes:

Notes:

FIELD MĀORI ASSESSMENT SUPPORT MATERIAL

TĪKAROHIA TE MARAMA
REALISE YOUR POTENTIAL

MAHINGA KAI

LEVEL 3

UNIT STANDARD 25477 (VERSION 6)

Plan, prepare, carry out, and evaluate the storage of crops in accordance with tikanga

(Level 3, Credits 10)

ASSESSOR BOOKLET

NZQA
Mana Tohu Mātauranga o Aotearoa
New Zealand Qualifications Authority

MQS
Māori Qualifications Services
Te Ohu Tohu Mātauranga Māori

Assessor Information

There are FOUR (4) assessment tasks that the ākonga must correctly complete to gain credits for this standard.

Evidence for Paetae/Achieved

All assessment evidence is practical and where possible, should be collected by the assessor and retained for assessment and moderation purposes (such as portfolio, answer sheets, audio or digital evidence).

You will need to discuss with the ākonga the length of time to complete the assessment. There are many ways ākonga may present their evidence. They may use:

- PowerPoint and talk to their presentation.
- Illustrations using images and identifying designs etc.
- Write descriptive essays, maintain a visual diary etc.

LEVEL 3

Ākonga assessment booklet

The ākonga receives this. It outlines important information for the ākonga including:

- assessment and other information
- assessment tasks.

Ākonga booklet

The ākonga receives this booklet. It outlines important information for their assessment.

Ākonga assessment tasks

All ākonga assessment material and any other evidence must be collected by the assessor and retained for assessment and modThese sheets and any other evidence should be collected by the Assessor and retained for assessment and moderation purposes.

Where ākonga choose to provide oral description/evidence for Task 3, this must be recorded (i.e. recorded onto a digital device) or verified by a credible verifier, i.e. a person with knowledge skills, experience, and mana. Where ākonga work has been selected for moderation, the file and/or attestation form must be included with the materials.

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You will need to discuss with the ākonga the length of time to complete the assessment. He ture-a-kōnui: one credit equates to 10 notional hours of teaching, practice and/or study, and assessment.

Authenticity

As per NZQA requirements, the assessor must:w

verify that the work submitted for assessment has been produced by the ākonga

consider (and manage) the potential for work to have been copied, borrowed from another ākonga, photocopied from a book or downloaded from the internet.

Ākonga may work with and learn from others to gather information from a variety of sources. However, you must be clear that the work to be assessed has been processed and produced by the ākonga.

To help manage authenticity of ākonga work, where the ākonga is asked to complete any written tasks, the ākonga is asked to use their own words as well as provide reference/s for their information. Please ensure you discuss this with your ākonga.

For further information, please refer to the following link:

https://www.nzqa.govt.nz/providers-partners/assessment-and-moderation-of-standards/assessment-of-standards/generic-resources/authenticity/

Referencing

This assessment requires the ākonga to reference his/her information. For the purposes of this assessment, the following are examples of reference styles.

EXAMPLES OF REFERENCING STYLES

1 **Book**

King, M. (2000). *Wrestling with the angel: A life of Janet Frame*. Auckland, New Zealand: Viking.

2 **Course handout/Lecture notes (electronic version)**

Archard, S., Merry, R., & Nicholson, C. (2011). Karakia and waiata [PowerPoint slides]. Retrieved from TEPS757-11B (NET): Communities of Learners website: http://elearn.waikato.ac.nz/mod/resource/view.php?id=174650.

3 **Film**

Māori Television (Producer). (2016). Iwi Anthems, Series 2 Episode 5 [video file]. Retrieved from: http://www.maoritelevision.com/tv/shows/iwi-anthems/S02E005/iwi-anthems-series-2-episode-5.

4 **Magazine/Newspaper article – popular/trade/general interest**

Fox, D. (2015, 15 September). Viewpoint: Not one more acre. *Mana*. Retrieved from: http://www.mana.co.nz/heritage/viewpoint.html.

5 **Personal Communication (letters, telephone conversations, emails, personal interviews, private social networking) – no reference list entry required (not recoverable); however, for quoting or citing in text**

J. Jackson, personal communication, March 12, 2011.

6 **Webpage**

New Zealand Trade and Enterprise. (n.d.). Agribusiness. Retrieved from https://www.nzte.govt.nz/en/export/market-research/agribusiness/.

PREPARATION FOR MODERATION

It is no longer necessary to complete a Moderation Cover Sheet as this information is entered online. If physical materials are sent for moderation, please ensure name of school and standard are included.

Digital submissions can be made directly through the application at any time.

Using the online External Moderation Application, schools and providers must include:

1. a copy of the task and any key supporting resources
2. a copy of the assessment schedule
3. up to FOUR (4) samples of student work consisting of the key materials that the assessor has used to make an assessment judgement. (ungraded unit standards: schools – 4 learner samples; providers – 3 learner samples).

For moderation to occur:

4. all files must be viewable online
5. URLs, e.g. for student created websites, will need to be submitted as links within a document.

For more information on the digital moderation process, please contact your Principal Nominee or Moderation Liaison (ML).

If you have any issues with preparing materials for moderation OR do not have materials to submit (ie you didn't assess this standard), **speak** to your Principal Nominee (PN) or Moderation Liaison (ML).

LEVEL 3

ASSESSOR INFORMATION – ASSESSMENT TASKS

Name		NSN #	

Outcome 1 **Plan the storage of crops in accordance with tikanga and crop requirements.**

Assessment Task 1

In consultation with your whānau, hapū and/or hapori.

Develop a plan for the storage of TWO crops in accordance with:

- **crops requirements, and**
- **tikanga.**

The plan must include:

At least TWO objectives that may include but is not limited to –

- production
- quality
- seed resources
- future prospects.

ONE storage practice that may include but is not limited to –

- indoor, or
- outdoor.

TWO storage methods that may include but is not limited to –

- mahiti
- curing
- elevated
- rua.

A forecast for at least TWO deviations to the plan that may include but is not limited to –

- crop diseases
- moisture
- temperature.

Present your plan to the whānau, hapū or hapori for their approval.

*A visual display and/or an oral description may include but is not limited to a PowerPoint or poster presentation. If ākonga choose to provide a visual display and/or an oral description, this must be recorded (i.e. recorded onto a digital device). If ākonga work has been selected for moderation, the file must be included with the materials.

This task assesses the evidence requirements of 1.1, 1.2, 1.3, 1.4, 1.5, 1.6.

1.1 Objectives for the storage of the crop are planned for in accordance with local tikanga.

Range includes but is not limited to – production, quality, seed sources, future-prospects; evidence of two is required.

1.2 Storage practices are planned for in accordance with local tikanga.

Range may include but is not limited to – indoor, underground; evidence of one is required.

1.3 Storage methods are planned for in accordance with crops requirements and local tikanga.

Range may include but is not limited to – mahiti, curing, elevated, rua; evidence of two is required.

1.4 Deviations from the plan are planned for in accordance with crop requirements and local tikanga.

Range may include but is not limited to – crop diseases, moisture, temperature; evidence of two is required.

Outcome 2 **Prepare the storage facility in accordance with the plan, tikanga and crop requirements.**

Assessment Task 2

Prepare storage facility.

This is a practical and group activity; however, you will be assessed individually.

Prepare TWO storage facilities in accordance with:

- crops requirements
- the plan
- local tikanga.

Storage facilities can either be traditional and/or contemporary, indoors or outdoors.

Prepare the equipment for the storage facilities in accordance with:

- crops requirements
- local tikanga.

(The assessor will have a checklist to check off as you work that must be accompanied with photographs).

This task assesses the evidence requirements of 2.1, 2.2.

2.1 Storage facility is prepared in accordance with local tikanga.

Range traditional and/or contemporary, outdoors, or indoors; evidence of two is required.

2.2 Equipment is prepared for in accordance with crop requirements and local tikanga.

Outcome 3	Carry out the storage of crops in accordance with the plan, tikanga and crop requirements.

Assessment Task 3

This is a practical and group activity however you will be assessed individually.

Carry out the storage of TWO crops in accordance with:

- **crops requirements**
- **the plan**
- **tikanga.**

The assessor will have a checklist to check off as you work.

This task assesses the evidence requirements of 3.1.

3.1 Storage of crops is carried out in accordance with crops requirements, plan and with local tikanga.

Outcome 3	Evaluate the storage of crops.

Assessment Task 4

Evaluate the storage of the crops.

Write an evaluation report on the storage of crops in accordance with local tikanga.

The report must evaluate:

- the methods applied in the storage of the crop in terms of the outcome of the crop
- any deviations from the plan in relation to terms of effects the crops outcome
- area's for improvements in storage in terms of enhancing the future outcome of the crop.

This task assesses the evidence requirements of 4.1, 4.2, 4.3.

4.1 The methods applied in the storage of the crop are evaluated in terms of the outcome of the crop and in accordance with local tikanga.

4.2 Any deviations from the plan are evaluated in terms of the effects of the crops, the outcomes of the crop, and in accordance with local tikanga.

4.3 Areas for improvement in storage of crops are evaluated in terms of enhancing the future outcome of the crop and in accordance with local tikanga.

Evaluation Report

The methods applied in the storage of the rīwai was a very good outcome for the whānau, there is plenty of seeds for next year's crops, and enough crops in storage to fulfil the hapū manaakitanga responsibilities and for distribution to whānau.

There were no deviations from plan contingency plans were put in place maintain temperature and other conditions to the ensure crops were free from crop diseases.

Areas of improvement in the storage of crops for future outcome to build a larger storage facility to store for marketing as well.

Checklist No 1

Candidate		**Date**	
Assessor		**Location**	

Domain	Whakamahi Whenua
Title	Plan, prepare, carry out, and evaluate the storage of crops in accordance with tikanga

Unit Standard	25477	**Outcomes / Evidence requirements assessed**	2, 2.1, 2.2

Activity 2 **Prepare the storage facility**	**Assessor comments**	**Supporting evidence**	**Yes**	**No**
TWO storage facilities are prepared in accordance with crops requirements, the plans and local tikanga • Temporary and/or contemporary • Indoors or outdoors				
Prepared the appropriate equipment In accordance with crops requirements and local tikanga				
Overall comment:				
Note: (for authenticity) Supporting evidence may include, and can be attached, such as photographs of the ākonga at work, ākonga journals etc.				

Assessor Signature		Ākonga Signature	

Checklist No 2

Candidate		**Date**	
Assessor		**Location**	

Domain	Whakamahi Whenua
Title	Plan, prepare, carry out, and evaluate the storage of crops in accordance with tikanga

Unit Standard	25477	**Outcomes / Evidence requirements assessed**	Outcome 3, 3.1

Activity 3 **Carry out the storage of crops**	**Assessor comments**	**Supporting evidence**	**Yes**	**No**
Storage was carried out in accordance with: • crops requirements • the plan • local tikanga				

Overall comment:

Note: (for authenticity)

Supporting evidence may include, and can be attached, such as photographs of the ākonga at work, ākonga journals etc.

Assessor Signature		Ākonga Signature	

LEVEL 3

Checklist No 3

Candidate		**Date**	
Assessor		**Location**	

Domain	Whakamahi Whenua
Title	Plan, prepare, carry out, and evaluate the storage of crops in accordance with tikanga

Unit Standard	25477	**Outcomes / Evidence requirements assessed**	4, 4.1 4.2 4.3

Activity 4 **Evaluate the cultivation of crops**	**Assessor comments**	**Supporting evidence**	**Yes**	**No**
Evaluate: • the methods applied in the storage of crops in terms of the outcome of crops and in accordance with local tikanga • any deviations from the plan in relation to terms of effects of the crops outcomes and in accordance with local tikanga • areas for improvement to enhance the future outcome of crops in accordance with local tikanga				

Overall comment:

Note: (for authenticity)

Supporting evidence may include, and can be attached, such as photographs of the ākonga at work, ākonga journals etc.

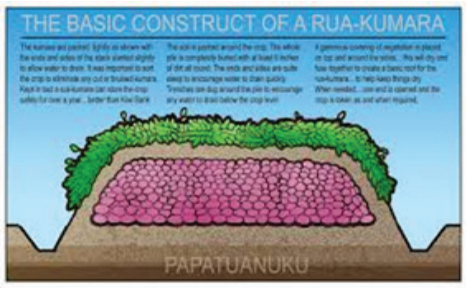
Assessor Signature		Ākonga Signature	

Resource Information

OBJECTIVES OF PLAN: THE MĀRA KAI O TE ORANGA

Storage Plan	
Objectives	To store enough seed resources for next year's production of crops to feed our whānau and to ensure that the marae can carry out the roles and responsibilities of manaakitanga on behalf of the hapū and iwi.
Storage practices	Indoor storage: • Clean and maintain the storage structure. • Protect the facilities from rats by keeping the immediate area clean of trash and weeds. • Concrete floor will help prevent the entry of rats, as will screens on windows, vents, and drains.
Storage methods	Curing of potatoes: • Harvest before soil temperature fall below 55 degrees to minimize bruising. • Protect from sun. • Wash only to remove clods of soil. • Cure in a cool, dark, moist place (55 – 60 degrees for about 2 – 3 weeks.
Deviations from plan	Have an alternative storage unit ready to store crops if required.

STORAGE OF RĪWAI AND KŪMARA



Traditional outdoor storage facility and equipment prepared.

Vegetation to Insulate materials for inner covering kūmara.

Spade to dig the rua and drainage ditch.

Sufficient soil to cover kūmara.

Evaluation Report

The methods applied in the storage of the rīwai was a very good outcome for the whānau, there is plenty of seeds for next year's crops, and enough crops in storage to fulfil the hapū manaakitanga responsibilities and for distribution to whānau.

There were no deviations from plan contingency plans were put in place maintain temperature and other conditions to the ensure crops were free from crop diseases.

Areas of improvement in the storage of crops for future outcome to build a larger storage facility to store for marketing as well.

LEVEL 3

MQS Māori Qualifications Services Te Ohu Tohu Mātauranga Māori

Assessment Schedule

Assessment Task 1

In consultation with your whānau, hapū or hapori. Develop a plan for the storage of TWO crops in accordance with crops requirements and local tikanga. The plan must include: At least TWO objectives that may include but is not limited to – • production • quality • seed resources • future-prospects. ONE storage practice either: • indoor, or • underground. TWO storage methods that may include but is not limited to – • mahiti • curing • elevated • rua. A forecast for at least TWO deviations to the plan that may include but is not limited to – • crop diseases • moisture • temperature.	Refer to sample answers.	TWO CROPS were selected for storage. A storage plan was developed in accordance with crops requirements and local tikanga. The plan included: TWO objectives from the following list – • production • quality • seed resources • future-prospects. Met the crops requirements and local tikanga. An indoor or on underground storage practice met the crops requirements and local tikanga. TWO storage methods included in the plan but is not limited to – • mahiti • curing • elevated • rua. Met the crops requirements and local tikanga. TWO deviations forecasted in the plan from the following list – • crop disease • moisture • temperature. Met the crops requirements and local tikanga.	Please tick: N ☐ A ☐

Assessment Task 2

LEVEL 3

This is a practical and group activity however you will be assessed individually. Prepare TWO storage facilities in accordance with: • crops requirements • the plan • tikanga. Storage facilities can either be traditional and/or contemporary, indoors or outdoors. Prepare the equipment for the storage facilities in accordance with: • crops requirements • tikanga.	Checklist No. 1.	TWO storage facilities and the appropriate equipment were prepared in accordance with: • crops requirements • the plan • local tikanga. The appropriate equipment necessary to prepare the storage facilities were prepared in accordance with • crops requirements • tikanga.	N ☐ A ☐
Assessment Task 3			
This is a practical and group activity however you will be assessed individually. Carry out the storage of crops in accordance with: • crops requirements • the plan • tikanga.	The checklist No. 2.	The storage of crops was appropriately carried out in accordance with: • the plan • crops requirements • tikanga.	N ☐ A ☐
Assessment Task 4			
Write an evaluation report on the storage of crops in accordance with local tikanga. • The report must evaluate: • the methods applied in the storage of the crop in terms of the outcome of the crop • any deviations from the plan in relation to terms of effects the crops outcome • areas for improvements in storage in terms of enhancing the future outcome of the crop.	The checklist No. 3.	The evaluation report for the storage of crops appropriately reported in accordance with crops requirements and local tikanga. • the methods applied in the storage of crops in relation to the outcome of the crop • any deviations from the plan in relation to the effects on the outcomes of the crops • areas for improvements in the cultivation of crops to enhance the future outcome of the crop.	N ☐ A ☐

Overall grade (please circle)	N (Not Achieved)	A (Paetae/Achieved)

Ākonga name		Assessor Name	
Ākonga signature		Assessor signature	

Completion date	

Notes:

Notes:

Notes: